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

EMERGENCY MANAGEMENT ISSUE

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As I mentioned in the November issue, emergency disaster response planning can play a crucial role in the underlying factor of whether an agency fails or succeeds during devastating events. Each major declaration in the United States reinforces the fact that there are agencies that need guidance on the “who,” “what,” “when,” “where” and “how” of emergency management. Every agency would love to employ an emergency management director who knows the intricate details of emergency preparedness, planning and prevention, response and recovery, and mitigation. The reality is that it just isn’t possible for many of our member agencies.

APWA’s Emergency Management Peer Resource Directory contains a list of individuals who have volunteered to share their emergency management expertise with other APWA members. Are you looking for someone who has experience with large-scale exercises? Perhaps someone who has served as Incident Commander? Looking for advice on heavy snow storms or flooding? Even a person who served as liaison with the NTSB for the recovery and cleanup of an international airline crash? The Peer Resources Directory contains individuals with experience in these situations and many more. Members can access the Peer Resources Directory through the Emergency Management Committee web pages (located under the Get Connected tab). The next time you have a question about emergency management, consider accessing this valuable member resource.

Imagine your community experiencing an event on the scale of the 2010 Snowmageddon storms, the 2011 Joplin tornado, or last fall’s Hurricane/Superstorm Sandy. U.S. Federal policy requires jurisdictions and organizations meet National Incident Management System (NIMS) training requirements for federal preparedness and recovery assistance programs—grants, contracts, reimbursements and other activities. Has your staff been NIMS trained? Go to the FEMA Training page at http://www.fema.gov/training-0 for more information and fact sheets on NIMS training. An independent study course, IS-700.a, provides an introduction to NIMS and is linked from the training page. This and other independent study courses enable users to learn at their own pace, on their own time and are free of charge. These courses are also available to Canadian members.

Our Canadian members may have received emergency management training through the Canadian Emergency Management College. However, the college has now closed and training was transitioned to the Canada School of Public Service. Members are encouraged to first contact their individual provincial emergency management organization for guidance regarding what training is available.

APWA members are generous individuals. We’ve received a number of messages from members volunteering for deployment to provide assistance in disaster zones. In both the U.S. and Canada, the...
process for providing onsite assistance is the same—you must first contact your state or provincial emergency management office:

- United States – www.emacweb.org – “Contact your State EMA” under the Mutual Aid Resources tab

Your national Emergency Management Committee and APWA are working hard to keep our members abreast of issues, to provide training and information, and also to represent our members’ interests. Don’t forget to check the Members’ Library for Congress programs, Click, Listen & Learns, and Reporter articles. Members are also working on updating the Resource Center with additional links and sample documents. There is much to be obtained through your APWA membership. You just have to look for it.

B.C. restroom is Canada’s best

Cleanliness, convenience and customer service converge at Langley Street near Bastion Square in downtown Victoria, British Columbia, where the City’s prized public restroom offers round-the-clock relief to residents for free. Victoria’s Langley Street Loo was a fan favorite in Cintas Canada’s annual Best Restroom Contest beating out the other four contenders to take the crown in this year’s competition.

The Langley Street Loo is applauded for its open design, offering the optimal balance of personal privacy and public access. It features a unisex toilet, exterior hand washing station, graffiti-proof coating, and a lit sign that makes it easy to find at night. This ready-made stainless steel facility is fully accessible for people with disabilities. The Langley Street Loo is maintained throughout the day by the City’s sanitation crew.

According to Dwayne Kalynchuk, P.Eng., PWLF, APWA Past President and Director of Engineering and Public Works, City of Victoria: “We are ‘flush’ with pride!”

The award-winning Langley Street Loo
Emergency Management Policy Outlook for 2013

Laura M. Berkey-Ames
Government Affairs Manager
American Public Works Association
Washington, D.C.

The New Year signals the start of President Obama’s second term and the first session of the 113th Congress. Much of this year’s work will be a continuation of the Obama Administration’s first term priorities and what lawmakers set out to accomplish during the 112th Congress.

APWA’s Emergency Management Committee and Government Affairs Committee members continue to advocate for increased federal investment to public works as first responders for an all-hazards approach to disaster assistance, the security of public works infrastructure systems and emergency management with the goal of moving toward effective mitigation, preparedness, response and recovery support.

The emergency management policy outlook for 2013 will be dynamic, and APWA is at the forefront working alongside fellow stakeholders, Congress and the Administration as they tackle the following key issues and initiatives:

FEMA Reauthorization
Lawmakers are expected again to take up legislation this year to reauthorize the Federal Emergency Management Agency (FEMA). During the second session of the 112th Congress, the “FEMA Reauthorization Act of 2011” (HR 2903) passed the House of Representatives by a voice vote on September 19, 2012 but failed to move through the Senate. The bill would have authorized funding and amended various programs.

Currently, FEMA and its programs are funded by a short-term spending law which finances the federal government until March 27, 2013.

A FEMA reauthorization bill similar to last year’s is likely to be introduced in the House during the 113th Congress. Provisions in the new bill are expected to include language to modernize the Integrated Public Alert and Warning System, reinstate the Emergency Management Assistance Compact Grants and the Dam Safety Program, establish a Public Assistance Pilot Program, and streamline the application process for American Indian tribes seeking disaster assistance.

It is unclear whether or not the Senate will propose its own reauthorization bill. A Senate version was not introduced during the 112th Congress.

Paying for the rebuilding and recovery costs of Superstorm Sandy, which struck the east coast in late October, could have impact on the FY 2013 appropriations process. Legislators may introduce legislation that would provide supplemental emergency funding for disaster response programs or perhaps additional funding would be allocated to DHS/FEMA disaster relief programs during the next round of appropriations negotiations.

Either way, addressing the costs of Superstorm Sandy will have an effect on how the 113th Congress approaches emergency management issues.

Cybersecurity
Although cybersecurity legislation failed to pass the 112th Congress, the issue remains a priority for the Obama Administration and congressional leaders.

The federal government’s role in cybersecurity was a very contentious issue during the 112th Congress, often dividing lawmakers along party lines. Many Senate Democrats sought to expand the role of the DHS Cyber Security Division by instituting mandatory national standards, performance requirements and risk assessments for critical cyber infrastructure. Conversely, House Republicans generally favored voluntary national standards, and preferred information sharing between public and private sectors rather than expanding the role of DHS.

During the congressional lame duck session in November, Senator Joseph
Lieberman’s “Cybersecurity Act of 2012” (S. 3414) cloture vote in the Senate failed 52 – 46 despite the Obama Administration’s endorsement. Earlier in the year, the House made a major push in April 2012 and passed four cybersecurity bills (HR 3523, HR 4257, HR 2096 and HR 3834). Their rapid passage was an effort by House leaders to put pressure on the Senate to complete negotiations and act on a bill. This effort was not successful.

With legislation stalled, the Obama Administration worked on developing a cybersecurity executive order throughout the latter half of 2012. The executive order would provide further direction to the Department of Homeland Security on how to preempt cyber threats and attacks. Because there is no cybersecurity law to date, the executive order, however, would not act as a presidential policy directive that implements or interprets a federal statute. The executive order has not been issued, and its details remain unavailable to the public. It remains in draft form, yet to be reviewed by the President.

Nationwide Public Safety Broadband Network
Throughout 2013 the National Telecommunications and Information Administration (NTIA) will continue to establish the Nationwide Public Safety Broadband Network (PSBN), an interoperable emergency communications network designed for the first responder and public safety community. Implementation of the PSBN will help improve public works personnel emergency response and recovery operations, enabling them to communicate on the same frequency—through voice and data—with other public works agencies, fire, law enforcement and emergency medical services.

In 2012, APWA played an active role and submitted comments to NTIA as the agency began to develop network architecture, design applications for public safety users and a State and Local Implementation Grant Program for the PSBN.

The Middle Class Tax Relief and Job Creation Act of 2012, which established the PSBN, also created the FirstNet Board and required that the Board create a standing Public Safety Advisory Committee to assist it in carrying out its duties. The FirstNet Board and Public Safety Advisory Committee are both housed in the NTIA. APWA Emergency Management Committee member, Phil Mann, P.E., serves on the Public Safety Advisory Committee.

White House Senior Director for Resilience Policy, Charles Donnell, announced in October 2012 during a Critical Infrastructure Partnership Advisory Council meeting that the Obama Administration intends to release Homeland Security Presidential Policy Directive 7 this year (HSPPD-7). HSPPD-7 would replace Homeland Security Presidential Directive 7, which was issued in December 2003 under former President George W. Bush. Like Homeland Security Presidential Directive 7, HSPPD-7 will establish a national policy for federal departments and agencies to identify and protect critical infrastructure from terrorist attacks and to work with state and local governments and the private sector to accomplish this objective.

HSPPD-7 will focus on the following: refine the role of the federal government; expand the directive’s scope to include all-hazards; incorporate cyber security efforts; strengthen information sharing; streamline congressional reporting requirements; and reaffirm the public/private partnership—indicating a stronger working relationship between government and private sector companies. HSPPD-7 is circulating among the White House National Security and Department of Homeland Security staff awaiting final approval from the President.

Laura Berkey-Ames is the Government Affairs Manager and the legislative liaison to the Emergency Management Technical Committee. She can be reached at (202) 218-6734 or lberkey@apwa.net.

National Homeland Security Consortium releases new white paper

On November 13, 2012, the National Homeland Security Consortium (NHSC) released a new version of its white paper, Protecting Americans in the 21st Century: Priorities for 2012 and Beyond. The new white paper is a product of the collaboration of over 20 national organizations—including APWA. APWA’s NHSC Representative and former Emergency Management
Committee Chair, Christine Walsh, who is the Director of Operations for the City of Beloit, Wisconsin, helped to develop the current white paper, with feedback provided by members of APWA’s Emergency Management Committee.

The white paper is an effort to advance homeland security goals in a time when national resilience is increasingly vital. The Consortium’s endorsing members stated that the following areas are not only of concern individually, but that leaders must recognize and begin to understand the interaction and intersection of these threats and vulnerabilities:

- **Cyber Hazards** – One of the most troubling aspects of this threat is the lack of a cohesive framing of the problem and the wide range of potential severities and consequences.
- **Climate Change** – While determining the cause of this global phenomenon may be an important factor in slowing, halting, or reversing the impacts, the Consortium is primarily concerned with the actions, policies, and strategies that will be necessary to mitigate, respond to, and recover from its consequences.
- **Demands on Global Resources** – The concerns of growing populations versus diminishing agricultural, mineral, and water resources will present a wide range of cascading consequences and implications potentially including mass migrations and civil conflict.
- **Changing Demographics** – Geographic location, age, ethnicity, education level, nationality, employment status, residency status, and language are all examples of demographics that are constantly in a state of change both domestically and across the world. While change is constant, the implications of these changes to health, safety, and security officials can significantly affect both policy and operations.
- **Emerging Technologies** – Advances in areas such as social communications, synthetic biology, genetic manipulation, advanced automation, increased connectivity, and computing power will certainly have grand societal benefits. However, we would be remiss if we did not consider the potential for accidental or intentionally malevolent applications as well.
- **Violent Extremist Ideologies** – The decline of one violent extremist ideology does not mean the decline of all, nor does it prevent the emergence of new terroristic threats to the nation. Enduring attention, analysis, and vigilance to this threat must be maintained.
- **WMD Proliferation** – This global hazard and threat requires an international effort. It also emphasizes, rather than diminishes, the need for a domestically prepared nation.
- **Mega-Hazards and Catastrophic Cascading Consequences** – Japan’s horrific tsunami experience reminds us of how truly catastrophic events can spread their consequences exponentially and globally. For both natural and technological disasters, it is paramount that the homeland security community, and those they serve, recognize the complex interdependencies, and consequent vulnerabilities, of our national systems.

Established in 2002, the National Homeland Security Consortium is a forum for public and private sector disciplines to coalesce efforts and perspectives about how best to protect America in the twenty-first century. The Consortium consists of 21 national organizations—including APWA—which is comprised of state and local safety, security and health professionals along with elected officials and the private sector.

The 2012 paper is an update to the 2008 and 2010 versions of the original white paper, *Protecting Americans in the 21st Century: Imperatives for the Homeland*.


For information contact Laura Berkey-Ames, APWA Government Affairs Manager and the legislative liaison to the Emergency Management Technical Committee. She can be reached at (202) 218-6734 or lberkey@apwa.net.

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“We do not inherit the earth from our ancestors, we borrow it from our children.”

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

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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/

- = Click, Listen, & Learn program  = Live Workshop

**How to Develop Effective Public Works Exhibits**

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**Public Works and Mutual Aid**

February 7, 2013 • 10:00 am Central time

Register online today at www.apwa.net/Education or call 800-848-APWA
Can there ever be too much information... when it comes to public works and emergency management?

Teresa Hon
Professional Development Program Manager
American Public Works Association
Kansas City, Missouri

I have to be honest; sometimes I’m frustrated that our members don’t make use of, or even reference, all the terrific resources developed by our Emergency Management Committee and Subcommittee members, other volunteers and staff. I often hear, “APWA should … (pick any one of the following, which are just a few examples of what we hear):

• provide training I can use with my staff;
• produce material to educate our community on our role as first responders;
• help my organization prepare for an emergency;
• let us know when grants are available for public works;
• help me understand mutual aid.

Most of the time my answer is, “We already do that.” With the new membership structure which provides access to resources and programs free of charge to APWA members, it is easier than ever to obtain the information. Once you’ve signed into the Members’ Library and select Emergency Management from the right-hand column, you have at your disposal a wide variety of Reporter articles you can read, past Congress programs you can listen to, recent Click, Listen & Learn programs to watch, additional resources available for purchase, and notification of upcoming events from which you can learn even more.

There is yet another source within the APWA website you can consult to locate more information on emergency management issues—the “Solutions by Topic” tab. This page contains a truncated listing of the latest infoNOW postings to the Emergency Management Community (which you should be subscribed to if you aren’t already). It also contains a link to an index of all Reporter articles published since 2000 which address or touch on emergency management concerns. From that index you can access an electronic version of the article. If you’re looking for emergency management-related pictures, appropriate photos from the Jim Martin Photo Library can be found here too.

Don’t forget the Resource Center. Available through the Solutions by Topic page or directly through the Discover APWA tab, these resources vary from sample documents to websites. We are constantly adding resources to this list. If you have a document or source you think is appropriate to share please send it, and a very short description, to Teresa Hon (thon@apwa.net).

There’s more for the emergency management professional. The committee and subcommittee’s web pages can be accessed through the Get Connected tab of the website. Here you’ll find copies of past meeting summaries, the committee’s work plan for the coming year, a roster of members, and more. Take a look at the position statements developed by the committee and approved by the Board of Directors. Perhaps you can use these in your agency or community to leverage support for training, steps to better prepare or as outreach tools with your constituents.

Nominations for national APWA committee/task force appointments

“Men make history and not the other way around. In periods where there is no leadership, society stands still. Progress occurs when courageous, skillful leaders seize the opportunity to change things for the better.” – Harry S. Truman

APWA is soliciting nominations for Technical Committees, standing committees, international task forces and other presidential appointments for the August 2013–August 2014 year. Step forward and offer your expertise to your profession. Contact your local chapter to let them know you have an interest in serving at the national level. Information on appointments may be obtained on the APWA website at www.apwa.net/membersonly/nominations beginning January 2, 2013 or from Cindy Long at National Headquarters, clong@apwa.net or (800) 848-APWA, ext. 5220. A brief bio must be completed online or through hard copy. Nominations must arrive at headquarters by close of business April 1, 2013.
Set aside some time to look through the APWA website to see what more there is to learn and use. If by chance we don’t have it, let us know and we’ll start working on meeting that need.

Your Emergency Management Committee members are Chair Kürt D. Blomquist, Public Works Director, City of Keene, N.H.; Christine Walsh, Director of Operations, City of Beloit, Wis.; David Bergner, Mesa, Ariz.; Michael Sutherland, Public Works Director, Town of Parker, Colo.; Teresa Smith, P.E., Program Management Officer, City of Atlanta, Ga.; Jeff May, P.E., Public Works Director, City of Knoxville, Iowa; Ken Hill, P.E., Assistant Director, City of Tulsa, Okla.; Phil Mann, P.E., Traffic Operations Manager, City of Gainesville, Fla. Cora Jackson- Fossett, Public Information Director II, City of Los Angeles Public Works Department, Calif., serves as the APWA Director-at-Large. Staff liaisons are Teresa Hon, Technical Services Program Manager, Kansas City, Mo., and Laura Berkey-Ames, Government Affairs Manager, Washington, DC.

Teresa Hon is a Program Manager in the Professional Development Department and the liaison to the Emergency Management and Fleet Services Committees as well as the Public Works Historical Society and staff contact for the MicroPaver pavement management software. She can be reached at (816) 595-5224 or thon@apwa.net.

"Public Works professionals have fully embraced the Mission Ready Packaging concept and have created 65 models to help their peers package their capabilities. This is far beyond what steps some other organizations have taken to promote resource packaging within their profession." – Leon Shaifer, NEMA EMAC Senior Advisor
PWA’s Donald C. Stone Center for Leadership Excellence in Public Works (DCS Center) will soon be entering its second year. It has been an amazing time. We are moving forward, looking to add value to participants and ever thankful to candidates and mentors for their dedication to professional development and public works.

In November 2012, the DCS Center held its first Mentor Forum, a conference call held the third Friday of each month. The purpose of the Forum is to give mentors an opportunity to ask questions, comment on their experience, get to know each other, share best practices and lessons learned, and resolve issues. The first few comments were about technical issues, but soon the questions turned to educational concepts. One of the mentors asked why journaling is important. What do we hope the candidates will accomplish through journaling? We then realized that Poster readers might also want to know how journaling can lead to better leadership.

**Background**

The APWA Board of Directors made the decision early on that the DCS Center should become known for educational excellence. The name clearly describes this intent—APWA’s Donald C. Stone Center for Leadership Excellence in Public Works. We honor Donald C. Stone because of his vision for education, professional development and the professionalization of public works.

We knew that excellence in adult education would reflect positively on the actual and perceived value of the designations offered through the DCS Center. Thus rigor and best adult learning practices were built into its design. This focus continues as we consider how we will develop content and educational practices for the technical and professional career paths.

We know that trial and error is part of educational design and that the program will evolve as new research and best practices come to light. But to the extent possible, the DCS Center will strive to offer the best professional development experience available. The best doesn’t mean

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**Adult learning and journaling**

**Mabel Tinjacá, Ph.D**
Director of Professional Development
American Public Works Association
Kansas City, Missouri

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**Rigor/Relevance Framework®**

Students gather and store bits of knowledge and information. Students are primarily expected to remember or understand this knowledge.

**A**

Students use acquired knowledge to solve problems, design solutions, and complete work. The highest level of application is to apply knowledge to new and unpredictable situations.

**B**

Students extend and refine their acquired knowledge to be able to use that knowledge automatically and routinely to analyze and solve problems and create solutions.

**C**

Students think in complex ways and can apply their knowledge and skills. Even when confronted with perplexing unknowns, students can create solutions and take action that further develops their skills and knowledge.

**D**
In public works has always been about applying knowledge, showing leadership, and engaging in creative and critical thinking.

**Journaling in the DCS Center**

All candidates are required to maintain a journal to earn their credential. Perhaps the easiest way to describe why this is such an effective learning tool is to point out that learning is like an active contact sport. The image of learners sitting in their seats listening to the instructor is pervasive, but we know that it is not optimum. Learners must be engaged and actively participate in the learning process. Even though our brains love to learn, they also love to forget. Journaling requires learners to be actively involved which increases retention, recall and recollection.

Journaling is about organizing thoughts and putting them down on paper, often clarifying what the learners know and—surprisingly—what they do not know. Reading and re-reading the written material to assure that it is logically organized and structured produces considerable two-dimensional learning.

Perhaps more importantly, the act of putting thoughts on paper is a process of discovery, creative thinking and self-awareness. It allows for evolution and clarification of insights, and sometimes discovering connections that were not obvious when the content was simply information. The best kind of journaling involves critical self-reflection or evaluation. Journaling across time gives learners a sense of their development.

It is not surprising that writing about a topic makes it easier to speak, discuss and debate it. It makes influencing others more effective because the speakers have already organized their thoughts, made connections, and integrated multiple opinions or perspectives. It is interesting that when readers know that they have to write about a book, the reading experience changes. Now they have to think, not just absorb.

By combining the extensive personal experience of a mentor with the perspective of the mentee along with opinions and perhaps learning styles produces a dynamic, enriched learning experience. The DCS Center built this opportunity into the mentoring exchange. It may start slowly, but can evolve into tremendous thought-provoking exchanges. The conversation is enriched; the knowledge gained can be more complex and can take new roads, including gullies and plateaus. Simply put, journaling is good pedagogy.

**Summary**

The APWA DCS Center is coming up on its second year of implementation. The potential is yet to be fully materialized, but it is exciting to imagine what might happen when experience (mentors) and potential (mentees) join forces to originate thoughts, solve problems, develop opinions and formulate strategies around the betterment of communities. That’s what leadership in public works is about. So as you consider ways to stimulate personal growth, consider journaling. If you would like to do this on steroids, join the DCS Center for Leadership Excellence in Public Works as a candidate or as a mentor!

*Mabel Tinjacá can be reached at (816) 595-5214 or mtinjaca@apwa.net.*

January 2013 APWA Reporter 11
Chicago on the cheap: pizza served deep

Joel Koenig
Senior Project Manager, Crawford, Murphy & Tilly, Inc.
Chicago, Illinois
Member, APWA Chicago Metro Chapter Congress 2013 Steering Committee

...that’s deep-dish style pizza for you coasters and other uninitiated folks. While the west coast hippies like to order pizzas with pineapple while they dream of Hawaii and the New Yorkers like their pizza so thin that it can be folded over like a piece of paper, a Chicago-style pie is made in a pan and eaten with a knife and fork.

Now I can go on and trash you Big Apple pizza-lovin’ Yanks for many things, not the least of your love of taking the slice in hand and eating with your fingers, but I gotta tell ya, I have to give props to folks like Dino of Uncle Paul’s Pizza in midtown Manhattan, who with his coworkers managed to keep the ovens hot and the pizzas cooking in the first 30 hours after Hurricane Sandy hit the east coast. New Yorkers, including many first responders, had a hot meal and the energy to help those needing the help the most. Way to go Dino and all you others who pitched in to get your communities back on track! You are an everyday hero, even if you like the thin stuff.

You see, there are those of us, including my youngest son, who think that pizza thick or thin is the food of the gods. So when you and yours are in Chicago, you just gotta try a deep-dish from one of the best Chicago has to offer. It is also a reasonably priced meal. I just keep telling myself that the tomatoes are part of a healthy diet.

Chicago deep-dish pizza goes back to at least 1943 when a Texan named Ike Sewell opened Pizzeria Uno just north of downtown (and just a couple of blocks east of Michigan Avenue).

How it is that a Texan knows beans about pizza-making beats me. Having lived in Texas, I know that a Texan will proudly tell you he knows a lot about beans, and a couple of other things too! But pizza? Well, he sure did know about pizzas, and boy did he get it right!

That was just the beginning for Ike and Pizzeria Uno. Deep-dish pizza became so popular that it was no longer considered an appetizer, but a meal in itself. Business grew but the building couldn’t, so they opened a second place just down the block and call it Pizzeria Due (get it?). A fellow named Rudy and his son Lou eventually come to run both Uno and Due.

Now this is where the story gets a little uncertain, but it is fair to say that Rudy and Lou Malnati eventually leave to open their own place, Lou Malnati’s Pizzeria. Now as you come to visit Chicago you quickly realize that Chicago is a very diverse city. So the story on Lou’s, as we locals call it, was that it was opened in 1971 by Lou and his family, Italian-Americans, in a Jewish neighborhood on St. Patrick’s Day. All I can say to that is…Mazel Tov, Erin Go Brah and Bon Appetite!

Pizzeria Uno is located at Ohio and Wabash just a short walk west from the shopping on North Michigan Ave. It’s located in an old Brownstown, near its sister restaurant, Pizzeria Due. This is the home of the original Chicago deep-dish pizza.
Growing up in the Chicago area, I was enthralled by the deep-dish pizza craze and have personally sampled many of these pies. Little did I know how popular deep-dish pizza would eventually become. I’ve shared my love of the deep-dish with my sons and Lou’s is the favorite of my youngest. Our college care packages to him frequently consist of frozen pies shipped to him at college. Many of the places mentioned here also offer frozen or “to go” pizza so you can have one shipped to your house and cook it up at home to share with the family when you get back from Congress. A much better gift than a “Gee, this is the t-shirt grandma got me from Chicago” t-shirt.

Now for a tip, deep-dish takes about 45 minutes to bake. If you are extra hungry, call ahead as some restaurants will take your order and have your pizza ready when you arrive or ask the host if you can put your pizza order in while you wait for a table.

The original and its sibling: Pizzeria Uno, 29 E. Ohio Street (312-321-1000) and Pizzeria Due, 162 E. Superior (312-943-2400), pizzeria.unotogo.com. They are located a couple blocks east of Michigan Avenue about 1.5 miles north of the Hilton.

My son’s favorite: Lou Malnati’s, 805 S. State St. (312-786-1000), www.loumalnatis.com. This is the closest of the “original recipe” deep-dish pizza restaurants to the Hilton Hotel, although not the original location. State is three blocks west of Michigan Avenue which is the street the Hilton is located. 805 S. is one block south.

Pequod’s, located at 2207 N. Clybourn Ave (773-327-1512), www.pequodspizza.com, is in the DePaul University/Lincoln Park area, which is a very popular neighborhood for the 20- and 30-somethings. Nothing fancy, but has a local feel and they offer both pan and thin style. Unfortunately, it is not in a convenient location for public transportation.

Gino’s East is at 162 E. Superior (312-266-3337), www.ginoseast.com. Gino’s was one of the early adopters (1966) of the deep-dish craze. If you like graffiti then bring your pens and leave your mark on the wall. We suggest you ask the server how they serve the pepperoni pizza before you place your order as they like to serve it thick, which may surprise some. Located in the near north area, close to Uno and Due, it is a good alternative if Uno and Due are too crowded or you have a hankering to do a little tagging.

Nancy’s, which is in the Lakewood neighborhood (near the Cubs’ Wrigley Field) at 2930 N. Broadway (773-883-1616), www.nancyspizza.com, has a different twist on deep-dish. They call their version a stuffed pizza. If you go, make sure you have an extra notch left on the belt.

Now my last entry doesn’t qualify for deep-dish nor is it in my favorites, but if you are bringing a young child or grandchild (and we welcome them) and need to find wheat-free pizza and a place to run out some of their energy while making sure the food hasn’t been exposed to gluten, we want to pass along that Chuck E. Cheese’s has begun to offer just that, a gluten-free pizza and cupcake that is kept separate to avoid cross-contamination. Awareness of gluten intolerance has become much more prevalent, so if you or your traveling companion needs information on available locations, drop me a note and I will do my best to inform you on what I know.

Joel Koenig is serving as a member of the Chicago Metro Chapter Congress 2013 Steering Committee. He may be reached at (312) 357-2075 or at jkoenig@cmtengr.com.
Nothing brings credibility to an organization more than national recognition for a job well done. In these tough economic times our stakeholders need to know that we are making the best use of their tax or fee dollars.

The Small Cities/Rural Communities Committee is pleased to announce that a new award for agencies from cities or counties with a population of 75,000 or less has been established to promote excellence in demonstrating creativity, ingenuity, and efficiency in the delivery of public works projects that have had a profound impact on the community. The award does not have a fixed dollar amount and can include, but is not limited to, the following categories:

- **Structures**: to include public structure preservation, rehabilitation, municipal buildings, parks, etc.
- **Environmental**: to include treatment and recycling facilities, landfill projects, sewer projects and sustainable practices.
- **Historic Preservation**: to include historical restoration, preservation, and adaptive reuse of existing buildings, structures, and facilities.
- **Emergency Response**: disaster or emergency construction or repair to include the techniques and timing for safety, community relations, environmental protection, adverse conditions and additional considerations.
- **Transportation**: projects that have created a positive impact on the life of the community to include roads, bridges, transit, traffic calming, etc.

To be eligible the project is defined as a physical structure or facility that is owned and maintained by a public agency to house governmental functions and provide water, power, waste disposal, transportation, quality of life projects or similar public services. Additionally, the project must have been “substantially completed” and available for public and/or agency use within two calendar years prior to nomination. If the project has multiple phases then “substantially completed” will be construed as that point when the final phase or segment is 90% completed and available for public and/or agency use. A project may only be nominated one time for this award in any category. Projects can be nominated by the managing public agency or your local APWA chapter.

Selection criteria to be used in selecting the winning project include:

1. Development of the project to meet a perceived need of the community.
2. Use of alternative materials, practices or funding that demonstrates a commitment to sustainability.
3. Unique or unusual accomplishments under adverse conditions that dictated the defined action.
4. Economic challenges that the community faced and the rationale of the option chosen.
5. Creative use of municipal resources, equipment, labor, or funds that produced measurable benefits to the community.
6. Construction processes that minimize the impact to the community and its residents during construction.
7. Demonstrate awareness of opportunities for environmental preservation during the project and how they were incorporated in the project design and construction.
8. Additional conditions deemed of importance to the public works agency, such as exceptional efforts to maintain quality control and, if value engineering is used, construction innovations as evidenced by time and/or money saving techniques developed and/or successfully utilized.

The APWA Projects of the Year Committee will review the nominations and select the award winner(s).

A designated representative of the public agency, contractor, and consultant will be presented a plaque at the Awards Ceremony during the APWA International Public Works Congress & Exposition and winners will be featured in the *APWA Reporter*.

For more information and submittal forms go to: www.apwa.net/about/awards/2013awards. The deadline for nominations is March 4, 2013 (electronic submittals only).

**Don Bruey** can be reached at DbrueyA4@gmail.com.
The art of helping

Tracy L. Warner, P.E.
Municipal Engineer
City of Ames, Iowa
Member, APWA Diversity Committee

My story begins when I was just a young girl riding in our family van, heading to Grandma and Grandpa’s house for another fun day on the farm. Being from the same general area of the state, we knew how to get there the quickest; however, that did not mean taking the smoothest of roads. As my sisters and I in the back of the van complained about the extra bumpy ride this spring day, my father, a civil engineer himself, began pointing out the cracked roadway pavement. He explained to us why the pavement had cracked, giving us such a rough ride.

In high school, I continued having an interest in science and math which had been sparked by an enthusiastic sixth-grade teacher who had a love for space travel. I still remember the day in sixth grade when we had the partition open to share the room with another class and had multiple televisions set up so we could all watch the Space Shuttle launch. My teacher was so excited, which spread to the other students and teachers in the room. What came next caught everyone in the room and throughout the nation by surprise and has since been known as the Space Shuttle Challenger disaster. Though I remember this day with deep sorrow, the nation and world has continued to advance technology and safety in science-related fields. This event is known to be a very influential part of my generation.

My high school calculus teacher worked hard to positively influence those students in her classes. Encouraging all of us to succeed in life, one day she gave us a presentation about becoming an actuary. Since I loved math, this stuck in my mind as a possible future profession. After all, she did point out the high salary that actuary professionals were set to make if they were successful. As I continued through high school, my mind explored several future professions that were all math and/or science related.

Proudly, I followed in my father’s footsteps of becoming a professional civil engineer. Much like my father, the first several years of my career involved working on projects while in private sector consulting. The types of projects and location of my work changed between the East Coast and the Midwest. In fall 2001, I found myself back in Iowa where I sought the comfort and safety of my home state. Out of the blue, I was approached to consider applying for a design engineering job in the public sector. It had never even crossed my mind to consider working in the public sector. Fortunately I didn’t have much time to “think” about it since the job posting closed the next day. I dropped off my completed application and just rolled with the process. The City interviewed several qualified applicants ranging in age, gender, and experience. Much to my surprise, I was offered (and accepted) the job.

The braveness that comes with being a public employee is admirable. My heart swells with joy when we get to help a citizen in our community who has been dealing with an undesirable condition. When our city experiences tornado/wind damage or flooding that closes all roadways in/out of the community, people pull together to take care of one another. Around the nation our public works employees are always there to help plow the snow from the roadways, no matter how much falls. They are also there to clear the roads when a wind storm blocks passage of the travel way. Being a public works employee is synonymous with the art of helping.

Our positive encouragement of growing generations helps to ensure that future public employees will be there to help. Reach out to encourage persons of all race, gender, creed, age, life-style, national origin, disability, personality, educational background, and income levels to take an interest in public works. It’s also never too early to start planning your National Public Works Week events (May 19-25, 2013). Excite a young student who may not have otherwise been exposed to public works, as my father did when he explained to me why the ride was bumpy. You never know where the next public works employee may be in waiting.

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

Submitted by: Phil Mann and the APWA Emergency Management Committee
Nominee: Teresa Scott, P.E., PWLF, Director of Public Works, City of Gainesville, Florida
Leadership Traits: Empowerment, Intellectual Stimulation, Power of Relationships, Integrity, Vision, Charisma, Knowledge Management, Symbolism/Visibility

Teresa Scott is responsible for the management of the Public Works Department for the City of Gainesville, Florida. The Department includes the following Divisions: Administration; Engineering and Environmental Management (surveying, land acquisition, project management); Planning (grant management, GIS, bicycle/pedestrian program); Regional Transit System (RTS); Operations (stormwater management, mosquito control, right-of-way management, asphalt management, concrete management); Traffic Operations (traffic management center, traffic signals, signs and markings, parking operations, parking enforcement); and Solid Waste (collection, recycling and education). Her responsibilities include management of the Public Works Department general fund budget, enterprise funds for solid waste, regional transit system and the stormwater management utility. She is also responsible for the development and implementation of capital improvement programs for stormwater management, roadway modifications, and bicycle/pedestrian facilities.

Teresa has worked hard to establish public works as a first responder and becoming recognized as an equal partner with other emergency services and first responders. She strives to create and maintain a “team” cooperative attitude between various departments, including police and fire. This work is evidenced by her leadership on a task force to upgrade the City Comprehensive Emergency Management Plan and active participation in homeland security and incident management drills.

For her work and dedication to emergency management and homeland security, she was appointed to the Federal Emergency Management Agency’s (FEMA) National Advisory Council (NAC) in January 2010 as a FEMA Administrator Selection. APWA Past President Larry Koehle, P.Eng., MPA, indicated, “Teresa is one of the most accomplished emergency management professionals in APWA’s membership, and she understands the role and expertise that public works emergency management plays in the preparedness and mitigation of disasters.” The NAC was established in accordance with the Post-Katrina Emergency Management Reform Act of 2006. Its membership may consist of up to 35 members appointed by, and serving at, the discretion of the FEMA Administrator. Since its inception, the council has made recommendations to the FEMA Administrator on the National Response Framework, the National Incident Management System, the Stafford Act, the National Disaster Housing Strategy, and on disability and private sector issues.

Teresa was recently appointed as the Vice Chair of the NAC. “I greatly appreciate the opportunity Administrator Fugate is providing me to continue involvement in the NAC, and I look forward to working with the Council and bringing a public works perspective on national preparedness issues,” she said.

Teresa’s vision for employees taking personal ownership of their on-the-job safety practices led to her full support of establishing a department-wide safety program and team that guides and directs employee safety policies, procedures and practices, including incentives and monetary awards at both the department and the city level. This program has been greatly successful in raising safety awareness with employees at all levels of the organization and reducing the number of on-the-job injuries and property damage.
This has been highly regarded as a premier program throughout the region and other departments and agencies have used it to model their safety programs.

While being evaluated last January for APWA reaccreditation, the City of Gainesville’s Public Works Department had all 363 practices rated as being in full compliance and 21 practices were published as model practices.

“Ms. Scott has clearly supplied superior service and vision to the community in her capacity as Gainesville’s Public Works Director and has done so with a very modest but clear spoken and authoritative demeanor. When Teresa Scott talks, people listen.” – Warren Nielsen, City Commissioner, District 3, City of Gainesville, Florida

Teresa has been a member of APWA since 1996, and her tenure at APWA has included serving as Chairperson (two years) and as a member of the Emergency Management Committee (six years), as well as a member of the APWA/FEMA Partnership Task Force, Diversity Committee, Center for Sustainability, and Congress Program Review Committee. She continues to serve the Emergency Management Committee on the Mitigation Subcommittee.

Teresa has distinguished herself as a strong, capable leader and expert in emergency planning and preparedness. She has strong credentials and extensive professional experience. As the Public Works Director for the City of Gainesville, she serves on the City’s Emergency Management Executive Team. She participated in the development of the City of Gainesville’s Emergency Management Operations Plan, and was lead writer of the City’s Public Works Department’s Emergency Management Operations Plan and the Continuity of Operations Plan. In addition, she served as the Incident Commander for Public Works during three declared disaster events during the 2004 hurricane season.

Teresa is active in representing the City in the Countywide Emergency Management Planning Process, Countywide Mitigation plan and annual countywide training exercises. She oversees the Public Works Department’s involvement in the University of Florida’s Gator Football game day unified command team and game day operations plan.

As an Assistant Public Works Director with Alachua County, Teresa served as ESF 1 and 3 lead on the Alachua County Emergency Management Team. She served as Planning Chief for Alachua County during the Flood of 1988.

Teresa also has authored publications. She co-authored Public Works and Terrorism Response: Black Sunday and authored Is Your Agency Prepared to Continue Providing Essential Operations in the Event of an Emergency?

In summary, Teresa Scott is a visionary leader. From an emergency management perspective, her main goal is the restoration of lifeline services to the citizens that public works agencies serve. She understands the concept that, to accomplish that goal, public works must be recognized as a first responder and must be prepared to respond. To that end, she has been a strong advocate on the national, state and local level for public works officials in achieving that status.
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APWA’s Awards Program recognizes individuals, groups and chapters for their outstanding contributions to the profession of public works. Some of the awards presented include Professional Manager of the Year Awards, Young Leader, Public Works Project of the Year, and Top Ten Public Works Leader of the Year, to name just a few.

Each award is listed on the APWA website. Criteria and nomination forms for the 2013 Awards Program are now available online.

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“The quality of a person’s life is in direct proportion to their commitment to excellence, regardless of their chosen field of endeavor.” These words illustrate why leaders must spend time sharpening their core competencies. This is not only critical to success, but is also important to fulfillment in our public works careers. Just who was the leader who said these words? It was the legendary Green Bay Packers coach, Vince Lombardy, a man who is no stranger to leading a team to greatness.

I am writing today to introduce the next series of articles sponsored by the APWA Leadership and Management Committee. Throughout this year we will have eleven articles that dive into the nine core competencies that are necessary to be a great public works leader. While each has timeless elements, there clearly is a need for us to commit to excellence in all areas as they evolve. Let’s take a superficial look at three areas and juxtapose historic application with the modern version of the same core competence.

**Plans for the Future**

It was not that long ago that planning challenges for public works leaders were simple and straightforward. Let’s look at how planning for our street programs has evolved over the past 30 years. Back then pavement management techniques were new and street paving planning was centered on replacing the streets that had failed. In many cases much of the planning centered around ensuring that funds were being spread relatively equally among political boundaries. Planning horizons were short, usually one to five years.

Today that type of planning is just not acceptable. We have detailed asset management programs that optimize the return on investment on our streets. We look at multiple investment strategies based on pavement deterioration history, thickness, loading and many other factors. The goal is to have the best streets for the least amount of reinvestment. Our planning must also take into consideration safe routes to school, complete streets, community sustainability, walkability and bikeability, along with VMT reductions. Community communication, education and goal setting are needed, which adds a huge communication component to what used to be a simple planning effort. Our planning horizon has expanded to 10 or more years with a very dynamic interface.

So, “Plans for the Future” is still a core competency, but what is involved has changed.

**Communication**

Previous generations of public works leaders made presentations to city council, chatted with local reporters and even attended the occasional public meeting. Their communication included returning phone calls to calm unhappy citizens. They had to ensure that contractors delivered the required neighborhood notices before beginning the projects. That basically covers the communication efforts in the ’70s and ’80s.

Present-day communication has become 24/7 due to the Internet, e-mail, smart phones, tablets, Twitter, Facebook, You Tube, i-neighbors, linked in, public meetings streamed on the Internet, webinars, etc.—you get the idea. Core communication skills have most definitely changed, and look out because the rate of change is increasing.

**Manages Staff**

It was only 20 to 30 years ago when the expectations of public works employees were much different. People were expected to stay in the same job for a long period of time, often their entire career. Companies, as well as government entities, had long vesting periods for retirement plans and other programs that encouraged longevity. The workforce was much less diverse both culturally and by gender. The expectations of differing age groups were more homogeneous in part because the workforce was comprised mostly of the Baby Boom generation, a large generation of people born between 1946 and 1964, until the early 1990s when Generation X, a smaller generation of people born around 1964 through the early 1980s, entered the workforce. It wasn’t until the Millennials entered the workforce, a generation of people born between 1980 and 2000, that the Baby Boomers were forced to deal with the concept of age diversity.

Ron Alsop’s book *The Trophy Kids Grow Up* (which I highly recommend to anyone over 40) explores how the Millennials entered the workforce, a generation of people born between 1980 and 2000, that the Baby Boomers were forced to deal with the concept of age diversity.
ers with only 20% staying in a job, down from 40% for the Gen-Xers and 65% for Boomers. The amount and type of feedback they need, the type of direction they desire, their ability to multitask, their need for technology and many more differences make managing staff in this generation different. It is still a core competence, but the methods and skills needed have changed.

The three competencies just mentioned, along with the remaining six, will be explored in-depth in this series. The remaining six competences are:

- **Leads an Organization**
- **Builds Relationships and Partnerships**
- **Manages Information**
- **Manages Money and Resources**
- **Manages Infrastructure**
- **Manages Municipal Services**

It was Abraham Lincoln who said, “Give me six hours to chop down a tree and I will spend the first four sharpening the axe.” We looked at three very simple examples of how our core competencies haven’t changed, but have required changes over the years. There are numerous subsets that go along with each of these nine competencies, and they will be used to expand the discussion of what skills are needed. Tools for sharpening our core competencies will be presented, and many will be provided through APWA. Read the series and learn from your peers because they will sharpen your ax.

That brings me to another quote which this time is by Thomas Jefferson, “The care of human life and happiness, and not their destruction, is the first and only legitimate object of good government.” With the recent Hurricane Sandy on the east coast, it is easy to see how important it is that everyone in public works commits to good government to care for human life and happiness, which is the first object of government. With public works as our chosen endeavor, what we do is absolutely critical to the health and happiness of our communities, and our commitment must be to excellence. Then, as coach Lombardy said, the quality of our life expands proportional to that commitment. The good news is that as public works practitioners the quality of our communities is also connected to our commitment to excellence. So, over the next year follow the Core Competencies series, commit to improve yours and expand your gratification in life.

Dan Hartman can be reached at (303) 384-8150 or dhartman@cityofgolden.net.

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A nation on the move

China’s national high-speed rail network – a Global Solutions in Public Works Project

Susan Pan, P.E., Engineering Manager, and Rachel Pan, Engineering Student Aide, County of Ventura, California

California is in the process of constructing a high-speed rail (HSR) from the San Francisco bay area to Los Angeles area. It will be the first HSR project and the largest public infrastructure project in U.S. history. As Americans endeavor in such a major transportation/infrastructure project, public works professionals can learn from the progress and development of China’s national high-speed rail network.

Since the 1990s, the Central Government of China has been planning and building an HSR network consisting of four north-south lines and four east-west lines across the country. HSR is typically defined as the average train speed of 124 mph (200 km/h) or higher. By this measure, China has the world’s longest HSR network with 6,200 miles (10,000 km) of routes in services as of December 2011 including 2,200 miles of rail lines with an average speed of 186 mph (300 km/h). The HSR network is expected to reach 16,000 miles by the end of 2015 connecting 42 major cities throughout the nation at a cost of US$750 billion; it will be more HSR track than the rest of the world combined. The HSR network complements the existing highway/roadway system, conventional railway system, and the domestic airlines for passengers’ transportation needs. China’s HSR network consists of upgraded conventional railways, newly-built high-speed passenger designated lines (PDLs), and the world’s only high-speed commercial magnetic levitation (maglev) line. Notable examples of the HSR lines include the Beijing-Shanghai HSR, a PDL opened in June 2011 that reduces the 819-mile journey between the two largest cities in China to under five hours with the train top speed of 236 mph (380 km/h). The Shanghai Maglev Train, which opened in March 2004, travels 19 miles between the Shanghai Pudong International Airport and Shanghai’s Longyang Road Metro Station in seven minutes and can reach a top speed of 268 mph (431 km/h).

The Project Trip
For this project, we traveled to China and Taiwan and took public transportation for the entire trip. We interviewed with staff of the China Ministry of Railways (MOR) and the Taiwan High Speed Rail Corporation (THSRC) during this trip. Our only previous trip to China was a fully-guided package tour; this completely self-guided trip by public transportation was an adventure for us.

From Los Angeles we flew into Beijing International Airport on day one. We took the express train, which connects the airport to the city subway system. It took about 15 minutes at a cost of CN¥25, about US$4. We then took the subway to the station closest to our hotel; the subway fare was CN¥2, about US$0.33. For the two-day stay in Beijing, we toured the city by taking the metro subways, buses, and taxi without any problem. On the fourth day, we took the subway to the Beijing South Station, which is the main hub for the HSR lines that connects Beijing with the other major cities of China.

The HSR trains between Beijing and Shanghai depart every 15 minutes or
so between 7:00 a.m. and 6:00 p.m. The coach fare one way is CN¥555, about US$92. Chinese citizens can reserve the train tickets online and retrieve or purchase the tickets from the many kiosks at the train stations. We bought our train tickets from the ticket window with showing of passport for the next available train leaving within an hour. With the exception of popular holidays, generally there is no need for advance ticket reservation since the trains depart frequently. If you missed the train for whatever reason, no worries—you can exchange the ticket for the next available train at no additional cost.

At the entrance of the train station, there are multiple security checkpoints for luggage and body scanning, which took only several minutes. Inside the train station, the waiting hall for boarding gates is equipped with computer screens showing the status of the train schedules. About 15 minutes before the train departure, passengers orderly lined up at the boarding gate for ticket checking and then proceeded to the platform and again lined up at the assigned car ready for boarding. The train arrived promptly for the passengers to get on board for their assigned seats and left right on time like a clock works.

The trains were as expected spanking new, clean, air-conditioned, comfortable, and non-smoking. There were food service and dining cars on the train. The friendly overhead broadcast made announcement of the rules on the train and the approaching train stops in Chinese and English.

The train traveled at a speed of 186 mph (300 km/h) as displayed on the speedometer screen in the train car. It made six stops before arriving in Shanghai, and the 819-mile journey took four hours and fifty minutes. There are a total of 24 train stops available between Beijing and Shanghai, and the trains take turns in making the total six stops for each train ride. This arrangement makes train rides to every city/stop on route available every hour. Each train has 16 cars and each car can hold 80 passengers for a total capacity of 1,280 passengers per train. The trains were at full or near-full capacity for all five of the HSR train rides we took.

Leaving Beijing, we visited Shanghai for two days and made day trips to Nanjing, the capital city of Jiangsu Province, and Hangzhou, the capital city of Zhejiang Province, by taking the HSR trains. Both Nanjing and Hangzhou are about one hour away from Shanghai by HSR trains. The trains run every 15 minutes or so between these major cities from 6:00 a.m. to 10:00 p.m., and there was no need for advance ticket reservation. These major cities all have networks of metro subways and buses in the cities, and we took them to tour the cities conveniently. The HSR network is connected to the city’s metro subway system at a major hub station, i.e., the Shanghai Hongqiao Station, the Nanjing South Station, and the Hangzhou Station. The Shanghai Hongqiao Station located on the west side of the city is the major hub for the HSR trains, Hongqiao Airport for domestic flights, and metro subways and buses. The Shanghai Pudong International Airport located on the east side of the city can be reached by taking the metro subways or by taking the Maglev train, which shorten the 19-mile ride to seven minutes between the Longyang Road Metro Station and the Airport. Shanghai has an extensive metro subway network of 12 subway lines.

Our final leg of the trip was to fly from Shanghai, China to Taipei, Taiwan. When the Chinese Communist Party took over the control of mainland China in 1949, the Chinese Nationalist Government moved to the island of Taiwan and has developed into a government with multiple political parties and democratic election process. From the Taoyuan International Airport, shuttle buses are available for transport to the nearest HSR station for free or to the Taipei Train Station at a cost of NT$125 or US$4. Taipei is the capital city of Taiwan, and Taipei Train Station is the main hub for the HSR trains, conventional trains, and the metro subways and buses. Taipei also has extensive networks of subways and buses, and it’s easy and fast to get around town in them.
direct metro subway/transit line that connects the Taipei Train Station and the International Airport is currently under construction.

Taiwan’s HSR line connects the northern capital city of Taipei and the southern port city of Kaohsiung and has been opened for service since January 2007. The HSR line is managed by the Taiwan High Speed Rail Corporation and is independent of China’s HSR network. The 214-mile train ride took as short as 96 minutes with average train speed of 186 mph (300 km/h). It would have taken four hours to drive the same distance. The train departs from Taipei or Kaohsiung about every 12 minutes with the express train making only four stops and the alternate train making all available eight stops. The full train fare is NT$1,490 or about US$50. Discounted fare is available for seniors and students.

Justification, Funding, Financing, and Economic Sustainability

China has a population of 1.3 billion people, who mostly live in the provinces along the Pacific coast and the two major rivers of Yellow River and Yangtze River. The two largest cities, Shanghai and Beijing, have populations of 23 million and 20 million, respectively. About 60 percent of the population live in major cities, and the urban migration continues to grow as the country industrializes. During the peak travel season of the Chinese New Year holidays in January 2012, it was reported that over 300 million people were travelling homeward bound! The HSR network provides a fast, reliable and comfortable means of transporting large numbers of travelers over long distances in a densely populated country. The central government justified the HSR network for the following reasons:

- It improves economic productivity and competitiveness over the long term by increasing the transport capacity of railways and linking labor markets. Moving passengers to high-speed lines frees up older railways to carry more freight.

- It stimulates the economy in the short term as HSR construction creates jobs and drives up demand for construction, steel, and cement industries during the economic downturn. Work on the Beijing-Shanghai PDL employed 110,000 workers.

- It supports energy independence and environmental sustainability. Electric trains use less energy to transport people and goods on a per unit basis and can draw power from more diverse sources of energy including renewable than automobile and aircraft, which are more reliant on imported petroleum.

- It develops an indigenous high-speed rail equipment industry. The expansion into HSR is also developing China into a leading source of high-speed rail building technology. Chinese train-makers have absorbed imported technologies quickly and localized production processes.

In January 2004, the State Council passed the nation’s “Medium- and Long-Term Plan of Railway Network.” The plan comprised a high-speed railway network consisting of four north-south lines and four east-west lines and other lateral lines, with the Beijing-Shanghai railway placed at the top of the priority list. By the end of 2012, China will have completed all of the four north-south lines including Beijing-Harbin HSR, Beijing-Shanghai HSR, Beijing-Guangzhou-Shenzhen-Hong Kong HSR, and Hangzhou-Fuzhou-Shenzhen HSR. The four east-west lines are scheduled to complete between 2013 and 2017 including Qingdao-Taiyuan HSR (2015), Xuzhou-Lanzhou HSR (2017), Shanghai-Wuhan-Chengdu HSR (2013), and Shanghai-Kunming HSR (2013).

In the years of 2010 and 2011, China committed investment of US$108 billion and US$106 billion, respectively, in railway construction. In September 2012, The National Development and Reform Commission approved 25 new rail projects with funding of US$127 billion. According to China Securities Journal, China plans to invest US$451 to US$602 billion in its HSR network between 2011 and 2015. About 40-50% of financing is provided by the central government through lending and equity shares invested by the
In summary, for traveling distance of less than 600 miles or 1000 km, it costs less to travel by HSR than by airplane, and travel by HSR is faster with less connection time taken. Although HSR traveling costs more than bus fare, it is three times faster and more comfortable.

**Engineering Technology Development and Transfer**

China has initially utilized and learned from technologies developed by Alstom of France, Bombardier Transportation and Siemens of Germany, and Kawasaki of Japan. All foreign companies were required to form joint ventures with Chinese companies for the manufacturing of the train assemblies. China has since developed their own technologies and industry in high-speed rail technology and hold about 1,000 local and international technology patents. Chinese train makers and rail builders have been building HSR in other countries including Turkey, Venezuela and Argentina. The train design and makers are listed as following:

- **CRH1 Series** are produced by Bombardier's joint venture Sifang Power Transportation (BST) with maximum speed of 250 km/h and train sets of 8 and 16 cars and seating capacity of about 650 and 1,300, respectively.
- **CRH2 series** are produced by Kawasaki and China South Rail (CSR) Sifang Co. with maximum speeds of 250 and 350 km/h and train sets of 8 and 16 cars. Taiwan’s THSR 700T train is derived from the Shinkansen 700 series built by the Japanese.
- **CRH3 series** are produced by Siemens and China North Rail (CNR) Tangshan Co. with design speeds of 350 km/h and 8-car sets.
- **CRH5A is produced by Alston and CNR Changchun Co. with maximum speed of 250 km/h and 8-car sets.**
- **CRH6 is designed by CSR Puzhen and CSR Sifang and manufactured by CSR Jiangmen with maximum speeds of 200 km/h and 250 km/h, will be used for intercity HSR lines.**
- **CRH380 series** are manufactured by Chinese companies including Sifang, Tangshan, and Changchun with maximum speed of 380 km/h and 8- and 16-car sets. Chinese-designed CRH380A holds the world record for the fastest train at 486 km/h. It is the first high-speed train developed by China.

The HSR lines use ballastless tracks, which allow for smoother train rides at high speeds and can withstand...
heavy use without warping and lower maintenance cost despite higher initial capital cost. It uses standard track gauge of 4 ft 8.5 in (1,435 mm). Electrical power requirement is 25 KV/60 Hz AC.

The Beijing-Shanghai HSR connects the two largest cities and the most important economic zones. Even though it traverses through only 6.6% of the nation’s territory, the area accounts for 26.7% of the nation’s population and 43.3% of the gross national product. Over 80% of the track is laid on viaducts to keep high-speed rail tracks straight and level over uneven terrain and to save on land acquisition cost. Due to the soft sedimentary soil along the coast, the foundation had to be deep-pile driven to beneath the sedimentary soil layers. Train bridges were built to cross the Yellow River (5,143 meters in length) and the Yangtze River (14,789 meters in length and causeway span of 1,615 meters). Dashengguan Yangtze River Bridge is a six-track railway bridge for the Beijing-Shanghai HSR, the Shanghai-Wuhan-Chengdu HSR, and Nanjing Subway.

Environmental Impact and Protection

The HSR improves energy efficiency and uses only one-third of the energy of airplanes and one-fifth the energy of the family cars. It uses electric power, which can be produced by sustainable and renewable energy sources such as solar, wind, and hydraulic power generation. It produces less carbon emission than cars and airplanes, which use gasoline for fuel, and therefore reduces air pollution, greenhouse gas emission, and dependence on foreign oil.

Management of the Engineering and Construction Program

The HSR program is planned and managed by the Ministry of Railways and approved by the National Development and Reform Commission. The central government has been planning and building not only the HSR lines connecting the major cities across the country but also the urban rail transit/subway systems for the first- and second-tier cities and the intercity rail lines.

The engineering design, construction, and manufacturing of the HSR systems have been largely privatized and industrialized. Engineering construction firms including China Railway Construction Corp., China Railway Engineering Corp., China Transportation Construction Corp., and Sinohydro Group Ltd. have been established to compete for the HSR projects through public bidding process. The Beijing-Shanghai HSR line was awarded and delivered in six construction contracts for reasonable size of project management.

Safety and QA/QC Program

On July 23, 2011, two high-speed trains collided near Wenzhou City and resulted in 40 deaths and 200 injuries. The Chinese government formed a commission to investigate the accident and slowed down approvals of new HSR lines, and implemented

Over 80% of the Beijing-Shanghai HSR track is laid on viaducts.

Your Ticket to Innovation – APWA’s Global Solutions in Public Works

Innovative programs in public works are a worldwide phenomenon. Whether it’s high-speed rail in China, the production of biogas for energy in Sweden and Germany, bicycling infrastructure in the Netherlands, or asset management in Australia, APWA and the public works community can learn from the international community.

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more stringent safety reviews and QA/QC procedures. To increase the safety margin and reduce costs, MOR has also decided to reduce top train speeds from 236 mph (380 km/h) to 186 mph (300 km/h).

The California HSR Network
The primary transportation system in Southern California is the highway and roadway systems. There are limited public transportation systems available including metro subways, commuter trains, and buses. Despite the extensive highway and roadway systems, there remains traffic congestion on the major highways in Southern California from early morning through early evening.

Travelling between San Francisco and Los Angeles with a distance of 418 miles takes about seven hours by car and about five hours by airplane taking into account airport security check and wait time, and the conventional train takes more than ten hours. California’s HSR will help the state meet ever-growing demands on its transportation infrastructure. The train will be initially running from San Francisco to Los Angeles/Anaheim via the Central Valley for 520 miles of HSR lines, and later to Sacramento and San Diego for a total of 800 miles of HSR lines. The high-speed trains will travel between Los Angeles and San Francisco in under two hours and 40 minutes, at speeds of up to 220 mph (350 km/h), and will interconnect with other transportation alternatives, providing an environmentally friendly option to traveling by plane or car.

The California HSR network provides the backbone of fast and reliable public transportation in California. With its alignment via the central valley, many coastal cities and communities do not have direct access to the high-speed rail network. There remain many opportunities to connect the various communities to the California HSR network through the regional rail transit and public transportation systems.

It has been a successful trip and very rewarding learning experience. We want to especially thank the APWA International Affairs Committee for their support of this Global Solutions in Public Works Project, and China Ministry of Railways and Mr. Hsinchu Jiang of the Taiwan High Speed Rail Corporation for all the information they provided.

Susan Pan can be reached at (805) 658-4354 or susan.pan@ventura.org; Rachel Pan can be reached at (805) 654-2039.

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The mission of the APWA Donald C. Stone Center for Leadership Excellence in Public Works (DCS Center) is to position public works professionals for the twenty-first century. In keeping with this important goal, the APWA Reporter features a section dedicated to applied research in public works. This section, published quarterly, provides insight into thoughtful analysis of issues and opportunities based on applied scientific research methods as a way of further contributing to the body of knowledge.

Many of the articles appearing in this section are capstone papers written by participants in the DCS Center Level 3 Public Works Executive (PWE) Program. Other research articles are selected based on the applied nature of the paper and its relevance to public works.

Researchers interested in submitting articles should visit the website http://www.apwa.net/donald-c-stone/Donald-C-Stone-Center/Public-Works-Research to learn details of the requirements for publication. Articles submitted to the “Applied Public Works Research” section of the Reporter will be reviewed by the DCS Research Council, an expert group of professionals and academicians comprising the editorial board. Depending on the technical aspect of a submission, a summary to highlight how the research can be applied may be requested. These will appear as “Research Application Summaries” appearing below the abstract. The 150-word abstracts of approved articles will be published quarterly. The full-length articles, as listed below, can be accessed via the link provided with each abstract.

This issue of the Reporter highlights two articles that fit the requirements for this section. The papers were presented in Government Technology Magazine and provided by the Center for Digital Government.

Disclaimer: The views and opinions expressed in these papers are solely those of the authors and may not represent those held by APWA or the entities referred to in the articles.

How to Lower Government Costs With PC Refresh

Source: Government Technology Magazine; Papers provided by the Center for Digital Government, a national research and advisory institute on information technology policies and best practices in state and local government.

Date: October 2011

URL: http://media2.govtech.com/documents/CDG11+STRATEGY+Lenovo_V.pdf

To successfully address their fiscal crises, state and local governments (SLGs) need sustainable, innovative, long-term technology solutions that deliver greater productivity and improve public service delivery. PC technologies, skillfully applied, can enable technologies that transform government. In this thought leadership white paper, the Center for Digital Government will articulate best practice strategies for delivering productivity improvements through the application of PC technologies, including desktop and mobile devices. We discuss how a PC life-cycle management plan can help organizations develop a customized PC refresh plan that can drive optimum results from transformative, productivity-enhancing technologies. Four accompanying issue briefs take a deeper look into the best practice strategies of managed services, mobile computing, standardizing enterprise IT and improving workflow for field employees.

Continued on page 36
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Controlling the Cost of Government with Technology

Source: Government Technology Magazine; Papers provided by the Center for Digital Government, a national research and advisory institute on information technology policies and best practices in state and local government.

Date: October 2011

URL: http://media2.govtech.com/documents/CDG11+BRIEF+Lenovo_Mobile_V.pdf


For more information about this special section of the APWA Reporter dedicated to applied research in public works, please contact Mabel Tinjacá, Ph.D., APWA Director of Professional Development, at (816) 595-5214 or mtinjaca@apwa.net.

Water Analysis Unit Coordinator
Washington Suburban Sanitary Commission
Laurel, MD

POSITION SUMMARY: Manages, administers, and directs the activities of the Condition Assessment Unit (Water) including supervision of engineering assistants and engineers responsible for the execution of the PCCP Inspection and water distribution Condition Assessment Program. MINIMUM EDUCATION & EXPERIENCE REQUIREMENTS: BS degree in Civil, Sanitary or Environmental Engineering. Five years of progressively responsible engineering experience in a maintenance, operations, or construction environment. Must obtain a Class 2 Water Distribution System Operator certificate within one year of employment. Possession of a valid driver's license. If interested go to www.wssewater.com and apply to Condition Assessment Unit Coordinator #13-0045 vacancy.

City Engineer
Unalaska, AK

Oversees engineering design, provides technical engineering support and is responsible for capital improvement project administration, resolving public technical questions, and developing engineering solutions for road, building, and utility maintenance projects. Reviews and oversees the designs and construction phases of capital improvements projects. Approves change orders, submittals, inspection reports, supervision of crews, budget management, and other construction documentation to ensure conformance with specifications. Responsible for various grant reporting and management for certain projects. Supervises Engineering Technician. Knowledge of standard civil engineering principles. Knowledge of permitting and environmental regulations for construction projects. Ability to prepare and present complex technical reports, design and presentations to non-technical audiences. Is responsible for fiscal management of capital projects. Ability to establish and maintain productive working relationships. Strong written and oral communications, problem solving, organizational, and interpersonal skills. Ability to maintain professionalism under pressure, multi-task to meet multiple deadlines. BS in Civil Engineering with three years of work experience as a professional engineer in construction management required, in government setting preferred. Have one year of supervisory experience, preferably in a government setting. Possess a valid Alaska Driver’s License or have the ability to obtain one. Alaska Registration as a Professional Engineer in Civil Engineering or ability to obtain. Please submit a City of Unalaska application, résumé, a reference release form, cover letter with three professional references, a writing sample, and a list of projects you have worked on.

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Dirty Work: A training exercise in emergency management

Doug House
Municipal Services General Manager
City of Moline, Illinois
Vice President, APWA Illinois Chapter

It started several years ago while receiving NIMS training with our Fire Department. The training officer asked if I had ever considered getting additional training at the National Fire Academy for Public Assistance Reimbursement. He believed the training would help me tie together my informal role as Public Works Emergency Manager and my role as point of contact for the City with FEMA. He was right; and since taking the training, I have been asked and subsequently accepted positions to serve on the County Incident Management Team (IMT), the County Emergency Planning Committee, and to be a participant on the Illinois Terrorism Task Force.

In the nearly 30 years in which I have worked in the public works field, I have seen many changes in the structure and implementation of emergency management. In the early days of my career, it was commonplace during a disaster for materials and resources to be jettisoned to local public works departments until they were overwhelmed and couldn’t take any more or until the resources ran out. Local agencies seldom knew what to ask for or how much they needed; but as a result of training and open minds, we have come a long way since then.

On August 24, 2012, I received an e-mail notice of an upcoming full-scale exercise from our County Emergency Manager asking if I could participate as a member of the IMT. This would be my first full-scale exercise. Oh, I had done tabletop exercises with the Army for an earthquake on New Madrid Fault along the Mississippi River, but this was much different. I would be in the middle of an active full-scale exercise with upwards of 50 agencies and hundreds of participants on the Rock Island Arsenal. My first response was to feel inadequate. Did I have enough training? Would I remember what forms to use? Most importantly, would the traditional first responders accept me? After speaking directly with the Emergency Manager, he assured me my role would likely be that of an observer and that it would be a good training. I agreed to participate.

I downloaded the Exercise Plan titled “Dirty Work” and took it with me to read on the plane trip to the APWA National Congress. The first day I returned from Congress was Thursday, August 30—the day of the exercise. I arrived at the Rock Island Arsenal Fire Station at 8:00 a.m., where I was met by the other members of our IMT. We were notified that there had been a car explosion and the Arsenal was responding and had requested other agencies to assist.

The responding agencies quickly determined that the car had been exploded by using a “Dirty Bomb”—low-level radioactive material. The explosion had left approximately 35 injured, some possibly dead, and others dying from various injuries. Two Command Vehicles arrived: one from Iowa (Scott County) and one from Illinois (Rock Island County). The Arsenal Fire Chief moved his Response Team and support agencies into the forward Command Vehicle to assess the incident status and ensure that all of the life safety concerns were being addressed. Some of the primary concerns to be addressed included caring for the sick and wounded including their evacuation, radiation levels, contamination exposure, decontamination, possibility of a secondary device, dealing with mutual aid responders, establishing a perimeter, facility evacuations of...
the uninjured, and establishing a command structure.

Our IMT set up shop in the remaining Command Vehicle and started to plan for the next operational period. Our team was comprised of people from eight different local governments representing a variety of disciplines including individuals from local Emergency Management, Police, two Fire Departments, Public Works, two Health Departments, and the National Weather Service. We began to build for the next operational period. Things we needed to consider immediately were command structure, key positions and personnel, establishing work shifts, and evacuation. In the middle of this preparation, the Arsenal Fire Chief sent a Fire Captain back to brief us in our Command Vehicle on the status of the response. They asked if we could provide two people—one to assist with operations and the other to assist with logistics. Very quickly a fireman volunteered to serve as Operations Chief in order to allow the first responders to continue to focus on their efforts. After some coaxing, I offered to assist with Logistics. We were both directed to the forward Command Vehicle where a briefing had just started. We were introduced by name and by the roles we would be

Inside the Command Vehicle first responders prepare for the next operational period.
assuming in the operation and then very quickly and without hesitation, each person in the meeting began to give reports on the status of their areas of responsibility.

When they were done there was an open and free exchange of information where we participated in making recommendations and offering suggestions. And that is how the entire event went—professionals from nearly 50 different areas of expertise, including FBI, ATF (Bureau of Alcohol, Tobacco, Firearms and Explosives), military police, local law enforcement, radiological engineers and response team, a hazardous materials team, a mass casualty team, five fire departments, and an Arsenal Public Works Contractor freely sharing, advising, and coordinating within the Command Structure. Not everything was perfect, as we learned in the next phase.

Only after the exercise when a “Hot Wash” evaluation was conducted by the Garrison Manager, could any one person get the full grasp of who had been involved and to what extent. As each area leader rose for the opportunity to address three positive and three negative observations from the exercise, the degree of professionalism and mutual respect became more apparent.

There was a small amount of constructive criticism, many more positive comments shared and a good deal of discussion on things learned from the exercise.

What a great day and what a great exercise! The single most important takeaway from this exercise for me personally was that no one cared what profession I came from…public works…police or fire; the only thing people were interested in was that I was there to help.

This experience taught me a lot about the state of where emergency management is today in relation to public works and how the shared training opportunities have helped the big three (police, fire, and public works) come together as first responders. It didn’t matter what type of exercise this was. I know that public works training with police and fire has led to good relationships and a personal trust between the responders. If you are ever given the opportunity to train jointly with police and fire whether in the classroom or as part of a full exercise as this one, I would highly recommend participating—because you just never know what you might learn that could help save a life!

Doug House is a member of the Government Affairs Emergency Management Subcommittee. He can be reached at (309) 524-2401 or dhouse@molinel.us.
Natural disasters have recently occurred nearly everywhere in the U.S. with increasing magnitude and frequency. In the last several years alone, two major hurricanes hit the Northeast, wildfires erupted in the West, devastating tornado outbreaks struck in the Midwest and Southeast, and significant earthquakes in 2011 shook Washington, D.C. and Oklahoma. Going back a few more years, there were massive blizzards in the eastern states and extreme flooding in the Mississippi and Missouri river valleys. As reported in the Fiscal Times:

Munich Re, the world’s biggest reinsurance firm, declared that “nowhere in the world is the rising number of natural catastrophes more evident than in North America.” Its latest study showed that weather-related “loss events” had quintupled over the past three decades—costing over 30,000 lives and causing in aggregate over $1 trillion in damages in inflation-adjusted dollars. (http://www.thefisctimes.com/Articles/2012/11/05/A-Rising-Tide-of-Natural Disasters)

Most emergencies are handled by local government; in fact, local government is expected to handle the first 72 hours without outside aid. But when assistance is needed from neighboring jurisdictions, the state, and/or the federal government, it is vital that all responders be able to communicate, coordinate and cooperate for maximum effectiveness and efficient use of resources. To achieve that goal, Homeland Security Presidential Directive 5 (HSPD-5) established the National Incident Management System (NIMS). Based on the Incident Command System (ICS), NIMS enables responders from different jurisdictions, disciplines, all levels of government, non-government agencies and the private sector to work together within a consistent framework.

All local governments should have Emergency Operations Plans based on NIMS that describe the authorities, responsibilities and roles of the agencies and organizations, public and private, that will be involved. Though public works is a fundamental component of emergency management, most agencies lack even basic training on NIMS and ICS. So, as is often asked, exactly what training is needed and readily available for public works?

The Federal Emergency Management Agency (FEMA) recommends that emergency responders, which includes public works employees, complete certain courses in order for an entity to be eligible for disaster expense reimbursement. The following provide guidance:

“Everyone involved in emergency management (to include emergency operation center personnel in support of the field), regardless of discipline or level of government, should take the NIMS baseline curriculum courses (Independent Study-700 and ICS-100).”


“State, tribal, and local governments are not required to participate in NIMS or adopt these best practices...NIMS documents contain guidance that is not legally binding. However, in order to participate in NIMS it is necessary for entities to adhere to the standards, practices, and or minimum criteria. Although a state, tribal, or local government or NGO is not required to apply for federal preparedness assistance, HSPD-5 requires adoption of NIMS by state, tribal and local governments and NGOs a condition for preparedness grants, contracts, and other activities.”
The last sentence above emphasizes that the adoption of NIMS is a prerequisite for obtaining federal funds for response, recovery and mitigation. The NIMS Compliance Assistance Support Tool (NIMSCAST) is an annual survey of each entity that participates, or intends to participate, in FEMA grant programs. Organizations report how many employees in each of four categories (entry-level first responders, first-line supervisors, middle management, and command and general staff level) are required to have, and have completed, the following:

- IS-100: Introduction to Incident Command System
- IS-700: Introduction to National Incident Management Systems
- IS-200: IS-701: NIMS Multiagency Coordination Systems
- IS-701: NIMS Multiagency Coordination Systems
- IS-702: NIMS Public Information
- IS-703: NIMS Resource Management
- IS-704: Communication and Information Management
- IS-800: National Response Framework
- ICS-300: Intermediate ICS
- ICS-400: Advanced ICS

It is important to note that each agency, not FEMA, determines what training should be required. However, IS-100 and IS-700 are considered essential for all personnel involved in emergency response. This includes inspectors, technicians, dispatchers, mechanics, and clerks as well as field workers and supervisors. (Part-time, temporary and some contract employees involved in emergency work should also have this training.) IS-200 should also be required of all employees. IS-701, 702, 703 and 704 are more for supervisors and managers. All of these courses are available online at: http://www.training.fema.gov/IS/crslist.asp. Some can also be conducted onsite for groups of employees.

ICS-300 and ICS-400 are recommended for supervisors and managers who might serve in Incident Command staff positions.
Both are classroom-only courses offered through each state’s emergency management agency. FEMA’s Emergency Management Institute (EMI) also provides these and other specialized courses for command and general staff positions at Emmitsburg, MD (http://www.training.fema.gov/EMICourses/docs/).

Understandably, finding time for training, even if it is online, is always a problem but it should be scheduled the same as for other tasks. Beyond the financial benefits, there are other strong reasons to pursue the free training from FEMA; it helps prepare staff and managers for the diverse roles and responsibilities that they will be called upon to perform. Other responder disciplines and officials now recognize that public works is an equal partner in emergency management with principal roles in the Incident Command and Unified Command structures; and, in some events such as winter storms and flooding, public works will be in charge. Furthermore, after the initial response phase is over and other disciplines return to routine duties, public works agencies may assume Incident Command with ongoing recovery operations like debris removal, infrastructure repair and restoration of services.

The following courses are recommended for public works managers and senior supervisors:

- IS-552: Public Works Role in Emergency Management
- IS-554: Emergency Planning for Public Works
- IS-556: Damage Assessment for Public Works
- IS-558: Public Works and Disaster Recovery
- IS-559: Local Damage Assessment
- IS-632: Introduction to Debris Operations
- IS-15: Special Events Contingency Planning for Public Safety Agencies
- IS-634: Introduction to FEMA’s Public Assistance Program
- IS-706: Introduction to NIMS Intrastate Mutual Aid

Other courses that would be useful to public works officials include:

- IS-253: Overview of FEMA’s Environmental and Historic Preservation Review
- IS-271: Anticipating Hazardous Weather and Community Risk
- IS-318: Mitigation Planning for Local and Tribal Communities
- IS-393: Introduction to Hazard Mitigation
- IS-546: Continuity of Operations Awareness Course
- IS-801: Emergency Support Functions (ESF) #1 – Transportation
- IS-803: Emergency Support Function (ESF) #3 – Public Works and Engineering
- IS-820: Introduction to National Response Framework Support Annexes
- IS-830: Introduction to National Response Framework Incident Annexes
- IS-860: Introduction to National Infrastructure Protection Plan

Also, the following online courses are for FEMA’s Professional Development Series:

- IS-120: Introduction to Exercises
- IS 235: Emergency Planning
- IS-240: Leadership and Influence
- IS-241: Decision Making and Problem Solving
- IS-242: Effective Communications
- IS-244: Developing and Managing Volunteers

Clearly, we must regard emergency management as a core function of public works similar to design, construction, and maintenance. Recognizing that, APWA’s Emergency Management Committee is developing a proposal for an Emergency Manager career path through the Donald C. Stone Center. The concept, at this time, is to establish the criteria to earn a certificate or certification in Emergency Management. Though much has to yet be decided, it is likely that some of the above courses will be included in the qualifications. Meanwhile, we encourage all public works agencies to actively pursue the training mentioned in this article.

Dave Bergner, retired Public Works Superintendent, is currently a Planner with Maricopa County Department of Emergency Management. He is a member of APWA’s Emergency Management Committee and several Transportation Research Board committees and panels concerned with maintenance operations and emergency management. He can be reached at dlbergner@gmail.com.
Local multi-hazard mitigation planning and the public works professional

James W. Maxwell, CEM, CSM
Commissioner of Public Works (retired)
City of New Rochelle, New York
Member, Emergency Management Recovery Subcommittee

The Local Multi-Hazard Mitigation Plan (LMHMP), part of a municipality’s emergency management program, requires a considerable amount of effort on the part of the public works manager. Look at the guidance documents associated with the development of a LMHMP, and in particular the natural hazards to be considered which can impact the municipality, and it quickly becomes apparent that the public works manager’s responsibility in the development of the LMHMP is more than just a few hours of researching file documents. The FEMA Local Hazard Mitigation Planning Guidance Document dated July 1, 2008, which provides a step-by-step format for developing the most comprehensive Local Multi-Hazard Mitigation Plan, provides references for natural hazard types which must be considered when developing a municipality’s LMHMP. Each natural hazard has the ability to incur, in varying degrees, infrastructure damage and disruption of daily operations and services.

All LMHMPs are developed using a team approach, a combination of municipal staff, community residents and volunteers, private sector service providers, utilities, businesses, schools, representatives of state government agencies and FEMA regional staff. LMHMPs developed to FEMA standards contain considerable data collection requirements and may include several hundred tables, charts, graphs and maps.

Municipalities may choose to utilize the services of a consultant in the preparation of the LMHMP in which case much of the outside research and documentation preparation would be performed by the consultant staff.

The public works manager is a principal member of the LMHMP development team since his staff and equipment will play a major role in both the response to and recovery from many of the natural hazard types associated with the municipality.

The Planning Process provides for how the development of the LMHMP will proceed including organization of resources, assessing risks and vulnerability, development of the actual mitigation plan document, implementing the plan and monitoring its progress. This process is clearly defined in the FEMA’s LMHMP Guidance documents.

The Municipal Profile is where the gathering of information for the LMHMP typically begins. Demographics, census, topography, land use, development and redevelopment, housing, commercial buildings and businesses, zoning, hospitals, shelters and schools, as well as critical infrastructure and emergency facilities information is gathered and indexed including tables, maps and charts. It is in the areas of critical infrastructure and emergency facilities where the public works manager typically has responsibility for the facilities and must be able to provide the required information for the LMHMP. The public works manager must also have a general knowledge of other municipal/agency-maintained infrastructure and services within the boundaries of the municipality such as interstate highways, airports, water, electric, natural gas, oil pipeline and shipping if located in close proximity to a major waterway. When necessary, the public works manager must obtain relevant information on those facilities. The public works manager must be able to analyze and develop broad-based projections for future infrastructure and services needs as well as what increased resilience existing facilities may need from the infrastructure operations and services standpoint.

The Risk Assessment is a multi-step process including identifying hazards that threaten the municipality, profiling hazard events including previous events and the likelihood of future occurrences, assessing vulnerability and documenting the municipality’s total exposure to hazards including assets at risk, critical facilities, future development trends, and estimating potential losses based on intensity of an event. For the public works manager, this is the most time-consuming part of their...
responsibility in the LMHMP’s development. FEMA does provide some assistance in this effort through the use of the Hazards US or HAZUS software program for certain hazard events. For effective use, the data must be formatted into readily understandable tables, charts and graphs including the identification of the sources of the data. Historical knowledge of the community and the professional judgment of the public works manager are critical during the development of the risk assessment portion of the LMHMP.

The Mitigation Strategy outlines processes and procedures to reduce the potential impacts of, and costs associated with, emergency and disaster-related events. Mitigation actions address a range of impacts, including those on the population, property, the economy, and the environment. Mitigation actions can include activities such as: revisions to and enforcement of building codes; revisions to land-use planning; training and education; and structural improvements.

The mitigation strategy portion of the LMHMP includes a summary of past and current mitigation efforts, local hazard mitigation goals and objectives, identification and analysis of mitigation measures and projects being considered, and the mitigation action plan (summary of specific actions).

Mitigation projects for the LMHMP are developed and typically include the protection of life and property, safeguarding critical public facilities and infrastructure, maintenance and enhancement of response capabilities, protection of the environment, and increased awareness and preparedness. Each goal is broken down into several objectives which are both specific and measurable.

As part of the mitigation strategy, the public works manager must research, inventory and assess those facilities and services under his jurisdiction as related to the hazards identified for the municipality. The public works manager must develop or revise the municipality’s capital programming in order to identify priorities for mitigation measures and sources of outside funding for hazards impacting municipal facilities, equipment and infrastructure.

Related projects which are currently funded or under design should be reviewed and revised where appropriate to include hazard mitigation measures. Of particular concern are areas of the municipality which may be subject to occasional or repetitive flooding as well as participation in FEMA’s Community Rating System Program.

Prioritization of the mitigation measures requires the public works manager to prepare a broad-based cost/benefit analysis which may include losses to varying degrees based on intensity of an event, damage to infrastructure, an estimated project time line, and alternatives for project funding.

Plan Maintenance requires a formal process that ensures the LMHMP remains an active, fluid and relevant document. LMHMP maintenance includes a method and schedule for monitoring, evaluating and updating the LMHMP at least every five years. This includes an explanation of how local government intends to incorporate their mitigation strategies into existing planning mechanisms, such as comprehensive or capital improvement plans, zoning and building codes. Continued public participation is a requirement throughout the LMHMP maintenance process. Here, the public works manager must be able to operate, maintain, monitor and adjust hazard mitigation measures related to everyday operations as well as maintenance, repair and capital improvement projects.

What becomes clearly evident in the development of the LMHMP is the role of public works in the municipality’s overall response to emergencies. In each of the basic elements of emergency management—mitigation, preparedness, response and recovery—public works is an equal partner, standing beside their first responder colleagues in an effort to minimize the disruption of services and return the municipality to normalcy. The development of a Local Multi-Hazard Mitigation Plan clearly demonstrates not only the need for collaboration and cooperation among municipal agencies and entities, but lends credit to solidifying the role of public works staff as emergency responders.

James W. Maxwell can be reached at (914) 239-8642 or Jimax153@optonline.net.

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he term “emergency management” is often associated with first responders—uniformed fire, police and medical service providers—more often than it is with public works agencies. Even some public works professionals who have front-line emergency experience are not necessarily comfortable with referring to themselves as first responders. But these perceptions, private and public, are changing.

In late 2009, the Department of Homeland Security (DHS) recognized public works as a critical agency and member of its Emergency Services Sector Coordinating Council (ES SCC), alongside law enforcement, fire and rescue, emergency management and emergency medical services. Prior to this designation, DHS had categorized public works’ domain of responsibility as “specialized capability.”

The truth is, public works has long been integral to all phases of emergency management. Now, with an official seat at the ES SCC table, public works has the opportunity to benefit from (and contribute to) interagency coordination, support and cooperation.

It was for precisely these reasons that the Administrative Management and Technology Divisions of APWA’s North Carolina Chapter joined forces to host a 2012 summer conference entitled, “The Role of Public Works in Emergency Management.” Designed to promote educational opportunities for North Carolina Chapter members and emergency management professionals across the state, the conference featured presentations by subject matter experts, industry leaders, contractors and public works professionals from local, state and national entities in both private and public sectors. Public agencies and entities represented at the conference included: the North Carolina Division of Emergency Management, the North Carolina Emergency Management Association, NCDOT, FEMA, APWA National Emergency Management Technical Committee (NEMTC), as well as North Carolina city and county leaders with emergency management experience.

To improve conference efficacy, North Carolina Chapter hosts surveyed its membership to help select topics in the areas of mitigation, preparedness, response and recovery. Chris Walsh, chair of the APWA National Technical Emergency Management Committee, presented The Role of Public Works in Emergency Management — Goals and Objectives. Michael Bolch, Federal Coordinating Officer, Southeast Div., DHS, FEMA Region IV, discussed How to be FEMA Ready When Disaster Hits. Consultant Chip Patterson, Director, Coxwell Disaster Recovery Services, talked about Preparedness Planning — A Key to Your Success in Disaster Response Recovery (see Figure 1). Gordon Deno, President, North Carolina Emergency Managers Association, explained How Public Works Fits into Incident Command System Structure.

An exhibit hall at the conference helped encourage interagency networking, simplify transfer of information and improve overall educational opportunities for attendees. At the end of the two-day event, North Carolina Chapter hosts (and participants) felt that this interactivity enabled its members to form critical relationships with emergency management agencies (see Figure 2).
Walsh said that the topics presented and the collaborative format of the conference helped people see the importance of working toward the common goal of educating public works on its role as first responders. “North Carolina exemplified to (APWA) chapters across the country the importance of emergency management and the valuable education that can be provided by hosting one of these events,” she said.

“The conference gave public works officials a chance to hear about the best practices in disaster response recovery, and learn about the tools needed to be successful in every aspect of emergency management,” said Patterson.

While the success of the conference could certainly be measured by the record number of attendees, participating exhibitors and the funds raised, its long-term value may be in the partnerships that were formed.

“Public works’ role in emergency response is as important as firefighters’,” said Deno. “When public works’ vital responsibilities are prioritized with our other agencies, we’re able to more efficiently conduct emergency operations,” he added.

A. Cameron Patterson can be reached at (919) 535-5201 or cpatterson@withersravenel.com; Brandon Inscore can be reached at (336) 373-4514 or brandon.inscore@greensboro-nc.gov.

Figure 2: The exhibit hall helped create a collaborative environment at the conference.

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Integrating public works into emergency management

Philip R. Mann, P.E.
Traffic Operations Manager
City of Gainesville, Florida
Member, APWA Emergency Management Committee

In the early morning hours of January 29, 2012, there was a multi-vehicle traffic crash on I-75 on Paynes Prairie in Alachua County, Florida. The traffic crash occurred in the fog and involved 25 vehicles and claimed the lives of 11 people and injured another 18 people. Our community immediately went into incident management mode with notifications to fire rescue, law enforcement and public works. The result was that the interstate was closed in both directions for approximately 24 hours.

Immediately, incident command was established with representatives from the various first responders forming the command team. As the incident occurred on the interstate, the Florida Department of Transportation, having jurisdiction, assumed the lead in the public works role.

Early in the event, fire-rescue took the lead in incident command as it was a search-and-rescue operation. After the rescue phase was complete, law enforcement assumed the lead role to investigate the traffic crash. In the final phase, public works assumed the lead role for the repair of the interstate that included damaged guard rail and asphalt.

During the course of the day, first responders worked with each other in addressing the various aspects of the incident. The interagency coordination was smooth and seamless.

The seamless coordination can be credited to the working knowledge that the first responders have of the other first responder agencies and their people. Due to the communities’ ongoing efforts in emergency management training, disaster preparedness drills and planned special events, the management and command staff of law enforcement, fire-rescue and public works are familiar with their counterparts in each of the other disciplines.

So how did Gainesville/Alachua County reach this type of integration of public works into the overall emergency management/unified command team? It was not easy and it did not happen overnight.

To gain a better understanding of the public works role, you first have to have an understanding of the law enforcement and fire-rescue roles. They work in a 24/7/365 environment and, in general, always work in an incident management role. When they are faced with a situation, absence any other support or information, they will resolve the situation and move on to the next scenario.

In public works, on the other hand, we are used to a normal fixed weekly workday schedule. During that normal workday, our workforce comes in and has planned projects and assignments. Incident management mode is an exception instead of the rule. It becomes vital that public works be ready to: (1) quickly transition to an incident management role; and (2) be prepared to respond and provide support 24/7.

The next step is to ensure that your agency participates in emergency management training, exercises and related events that will also involve the other first responder departments within your organization. To garner their acceptance into an emergency management role, you have to demonstrate that public works is a resource and can be counted on during an emergency, regardless of time of day.

So, how did the City of Gainesville get to the level we are today? We started in training and meetings on ways we could provide assistance and relieve other first responder personnel to perform law enforcement or fire-rescue duties. We demonstrated that we could handle traffic control, barricades, detour routes and...
responds to the scene of the crash and reviews engineering and environmental factors that may have led to that crash and also provides input to the Police Department regarding the crash reconstruction.

It has also led to the Gainesville Fire Department calling the Public Works Department for major structure fires. On several occasions, Public Works staff has responded to the scene of an active structure fire with heavy equipment and equipment operators. That equipment is used to help the Fire Department get to parts of the building that were inaccessible to firefighters and allow them to complete the firefighting process.

Through our reoccurring participation and assistance in emergency management, utilizing the Unified Command pyramid has become second nature for the City of Gainesville. Whenever there is an incident, Public Works is immediately notified by either the Police or Fire Departments. They also understand that, outside of our normal business hours, we have to call staff out so they provide as much notification as possible to get our call-out process started.

Which leads me to another critical component for achieving and maintaining success—our frontline personnel. The Department has three different staff members on call at night. All staff that serves in an on-call capacity is educated on the importance of working with the other first responders and the need to respond in a timely manner.

Now that we have established those relationships, it is critical that we maintain them on a daily basis. We have utilized unified command and the incident command system on a variety of planned events:

- Seven home football games annually at the University of Florida
- University of Florida’s Annual Homecoming Parade & Gator Growl (pep rally)
- The January 29, 2012, I-75 traffic crash that involved 25 vehicles and 11 fatalities
- The Dove World Outreach Congregation’s International Judge a Qur’an day
- The Dove World Outreach Congregation’s International Burn a Qur’an day
- Protests from the followers of the Westboro Baptist Church
- NCAA Football & Basketball National Championship Celebrations for the University of Florida athletic teams
- Extreme Makeover Home Edition’s reconstruction of a single family home

Through these professional relationships, the command level staff that works with each other on a daily basis has developed personal relationships as well. Through these established relationships, the various members of command level staff routinely call each other for assistance, advice and even direction about how to address a normal routine business issue in the other’s department.

If you do not already have this type of interagency interaction and relationships, it will not change overnight. Public works staff must be vigilant at developing the relationships and interjecting itself at the appropriate locations in these incidents. It has be a grassroots effort to gain local acceptance and that can only be obtained through repeated participation in incidents and continued demonstration of the benefits that public works provides.

Philip R. Mann can be reached at (352) 393-7960 or mampr@cityofgainesville.org.
When you hear the term “emergency management” the first thing that typically comes to mind is natural disaster. Events like Superstorm Sandy, earthquakes in Japan and Haiti, tsunamis in the Indian Ocean and Japan, tornadoes in Parkersburg, Iowa and Joplin, Missouri, and Hurricane Katrina, have brought natural disasters to the forefront of media attention around the world. Natural disasters can cause the loss of lives and huge amounts of destruction. This common perception of emergency management often causes people to relate preparedness to being ready to respond to a natural disaster. While this is a large portion of being prepared, there is much more to consider.

Training is a major component of being prepared. Finding time to train can be difficult. Knowing what risks and events to train for can be equally challenging. Keeping abreast of proposed legislation that will impact public works is a never-ending task. Time constraints leave many to focus on providing training for more common natural disasters and complacent about tracking proposed legislation and training for less frequent natural and man-made disasters.

No doubt your agency has completed some emergency management training. We like to think we are prepared. But how prepared is your agency?

The emergency management scene is full of acronyms that can make communication with state and federal agencies challenging if you are not up to speed. Let’s take a look at some of the issues, risks and terminology of emergency management.

**Recognition of Public Works as First Responders**

One of the biggest issues that APWA is undertaking is the inclusion and recognition of public works in legislation that identifies first responders. Legislation being drafted to address emergency management needs often overlooks public works. We are normally the first to arrive on the scene when disaster strikes and last to leave. Our jobs include assisting and providing access for police, fire and rescue to get in and do their jobs. But our jobs also include cleanup and restoration of public safety and public health that continues long after those departments have left.

This effort in no way wants to minimize the work of police, fire and rescue. The work they do is dangerous and critical to public safety. Public works, though, is also a critical part of emergency management and public safety.

**Department of Homeland Security (DHS)**

The Department of Homeland Security was created in response to the September 11, 2001 attacks. DHS was formed to protect and respond to terrorist attacks, man-made accidents and natural disasters.

**Federal Emergency Management Agency (FEMA)**

FEMA was created to coordinate response to disasters, within the United States, that are beyond the capabilities of local and state authorities. FEMA can also be a source of financial assistance to respond to, prepare for, recover from and prevent the recurrence of disasters. In order to be eligible for financial assistance specified NIMS training must be completed prior to a disaster. The FEMA website, www.FEMA.gov, is a great resource to help expand your knowledge.

**Emergency Management Assistance Compact (EMAC)**

EMAC offers assistance during governor-declared states of emergency. EMAC establishes a legal foundation and the responsibility for liability and costs that are problematic when crossing state lines. Additional information on EMAC can be found at www.emacweb.org.

**National Incident Management System (NIMS)**

NIMS provides a framework to coordinate emergency preparedness and incident management and response. NIMS training is required under Homeland Security Presidential Directive 5 (HSPD-5) to receive federal funding, grants, training and reimbursement of disaster recovery costs. Information on required and recommended training can be found at www.mediacon.com/PDFs/2010-12-08_NIMS_Training_Grid.pdf. Information on NIMS training courses can be found at www.training.fema.gov/is/nims.asp.

**National Response Framework (NRF)**

NRF establishes a comprehensive approach to incident management.
NRF is an all-hazards plan built on the template of NIMS.

**Incident Command System (ICS)**
ICS is a standardized, on-scene, all-hazards incident management approach. When outside agencies come together to assist with an incident, the ICS structure provides a common known organizational structure. ICS has five major functional areas: Command, Operations, Planning, Logistics and Finance/Administration. The flexibility of ICS allows users to use only the functional areas needed for a specific incident.

**Resource typing**
Resource typing is categorizing, by capability, the resources requested, deployed and used in incidents. Measurable standards are used to identify resources by capabilities and performance levels to make sure the requester gets the resource they need.

**Credentialing**
Credentialing is the process of validating personnel qualifications. When you request additional workforce, credentialing ensures the personnel are trained and capable of performing the necessary work and ensures you get the assistance you need.

**Cybersecurity**
Cybersecurity is the protection of our cyberspace from cyber intrusions and attacks. Our daily life is dependent on a stable, safe and resilient cyberspace. President Obama declared that the “cyber threat is one of the most serious economic and national security challenges that we face as a nation” and that “America’s economic prosperity in the twenty-first century will depend on cybersecurity.” All agencies are vulnerable to an intrusion or attack or the consequences of an intrusion or an attack in their region.

**SAFECOM**
SAFECOM is a program to improve multi-jurisdictional and intergovernmental communications interoperability. SAFECOM addresses the challenges, needs and best practices for emergency communications.

**Narrowbanding**
Narrowbanding is the migration from 25 kHz to 12.5 kHz for radio systems operating in the 150-174 MHz and 421-512MHz radio band to provide for more efficient use of the VHF and UHF spectrum. All Public Safety and Industrial/Business land mobile radio systems must migrate to the 12.5 kHz efficiency technology by January 1, 2013. Narrowbanding will allow for the creation of additional channels in the same spectrum, thus supporting more users. Not operating at 12.5 kHz efficiency by January 1, 2013 will be a violation and subject users to FCC enforcement action.

**D Block**
D Block legislation reallocates the 700 MHz D Block spectrum to public safety. The legislation also provides $7 billion to help fund the buildout of a nationwide Long Term Evolution (LTE) network for first responders and created the First Responder Network Authority (FirstNet) to ensure the establishment of a nationwide interoperable public safety broadband network. This national communication network for first responders was one of the recommendations from the 9/11 commission to help increase national security.

**Weapons of Mass Destruction (WMD)**
Weapons of Mass Destruction (WMD) are any destructive device that may be of Chemical, Biological, Radiological, Nuclear or Explosive (CBRNE) nature. A CBRNE incident may be an act of terrorism or a major accident involving hazardous or toxic materials.

**Pandemic**
A pandemic is an epidemic of infectious disease that has spread through human populations across a large region or even worldwide. Notable pandemics include smallpox, tuberculosis, HIV and H1N1.

These are only some of the issues, risks and acronyms in emergency management. The information provided is not intended to be a full explanation or an entirely comprehensive list, just a brief explanation and introduction into the broad scope of emergency management. There are many potential risks and each risk requires specific planning and training.

Preparing your agency for all potential risks is an overwhelming task. Identifying and preparing for the risks that are of concern to your community is a must. Your City, County or State Emergency Management Coordinator should have a Hazard Mitigation Plan that identifies the potential risks in your area.

The potential risks identified in that plan will help determine the training that is necessary for your agency. You will want to make sure you have completed the required NIMS training and have an understanding of the NRF and ICS. Your City, County or State Emergency Management Coordinator can help you find and arrange for other training that you need. While you may not be experienced in emergency management, you should have enough training to know where to go to negotiate your way through any disaster you may face.

Do you still think you’re prepared?

Jeff May is the Assistant Public Works Director for the City of Des Moines, Iowa, and a member of the APWA national Emergency Management Committee. He can be reached by phone at (515) 237-1359 or by e-mail at jmmay@dmgov.org.
Public Works directs Endeavour Shuttle debut in L.A.

Cora Jackson-Fossett
Director, Public Affairs Office, Department of Public Works
City of Los Angeles, California
APWA Director-at-Large, Leadership and Management

Reminiscent of a Hollywood premiere, the Endeavour Shuttle rolled through the streets of Los Angeles amid thousands of adoring fans. The dramatic, spectacular event, which occurred October 12-14, 2012, marked the first time in history that a huge spacecraft motored along city boulevards as if it were a passenger vehicle. More than 500,000 people witnessed its journey as Endeavour made the 12-mile, 62-hour trip to the California Science Center (CSC).

As usual when the remarkable occurs, public works employees play a critical role to ensure a successful outcome. This memorable activity was no exception. From engineers to inspectors to urban foresters to street maintenance workers to streetlighting technicians, Public Works was fully involved, coordinating closely with the Los Angeles Police and Fire Departments, Los Angeles Department of Transportation, utility companies, museum executives, elected officials and community leaders to organize the unique episode.

Preparing for Endeavour
After considering several ways to bring Endeavour to the museum, CSC planners recommended the city streets as the best option. The spacecraft would first arrive at Los Angeles International Airport on the back of a 747 jet, then travel two miles per hour, past a multitude of residences and businesses, before coming to rest at the Science Center.
Everyone understood the mission; however, both city government and museum executives agreed an expert project manager was needed to ensure that all entities worked together. Mayor Antonio Villaraigosa bestowed that honor on City Engineer Gary Lee Moore, P.E., General Manager of the City’s Bureau of Engineering.

Moore assigned Deputy City Engineer Vince Jones, P.E., and Principal Civil Engineer Shailesh “Sunny” Patel, S.E., both highly respected for their project delivery and technical expertise. They were supported by Structural Engineer Shirish Mistry and Administrative Assistant Cynthia Jefferson.

As overall project managers, Jones and Patel were responsible for organizing the activities of all City departments involved in the shuttle’s movement, bringing together affected outside agencies, and connecting with impacted neighborhood leaders.

“When I received the assignment in July, I knew the timeframe was a factor,” said Jones. “We had a very short amount of time to grasp the enormity of something that had been in the planning stages for months. Our main concern was if we had enough time to get everything coordinated in order for the move to occur in October.”

Patel added, “This event would have a substantial effect on the city’s aging infrastructure. All obstructions had to be cleared along the shuttle’s path. In addition, we had to ensure the safety of pedestrians and motorists as well as protect the Endeavour and City property.”

The infrastructure impacts included the relocation of power lines at 35 intersections, the removal and post-project reinstallation of 215 streetlights and 50 traffic signals, and removal of 268 trees, just in the city of Los Angeles. The City of Inglewood made similar infrastructure adjustments, but on a smaller scale than L.A.

“Our first actions were to put together a plan outlining Public Works’ and other City departments’ involvement, get an understanding of everything that was already done and what remained to be done,” recalled Jones. “We created a work plan (a spreadsheet) that listed every activity that would be involved and who was responsible for that activity. For instance, we knew the City’s Bureau of Street Services would oversee tree removals and tree trimming and that LAPD, LAFD, and LADOT would collaborate on traffic and crowd management. Once we listed everything and who was involved, we were able to lay out a timeframe. Then, our comfort level increased. We felt like we were organized and recognized the mission was very doable.”

To communicate the plan to all involved agencies, regular operational briefings focused
on agency coordination and infrastructure concerns. The LAPD and LAFD invited Jones and Patel to participate in the Unified Command meetings as they addressed the public safety issues and traffic management. In addition, Jones and Patel worked closely with the Mayor’s office, four City Council offices and the Board of Public Works on community and political concerns.

“We also met weekly with the California Science Center team to make sure they had everything they needed from the City such as permits,” said Jones. “Communication was key and having all of the meetings allowed us to stay on top of things, ensure gaps were filled, details discussed and anticipate potential roadblocks.”

**Protecting the City’s Infrastructure**

“The Endeavour is a gigantic structure—five stories tall, 7,122 feet long, 78-foot wingspan and a weight of nearly 85 tons. Plus, its outer shell was extremely delicate and the slightest pressure against its tile skin could cause parts to fall off.

“Everyone was excited to have the shuttle in Los Angeles, but we didn’t want the city streets, lights, traffic signals or trees harmed in the process,” said Patel.

The matter of the trees was an especially sensitive subject. Community members habitually appear before the Board of Public Works to protest tree removals even when replanting is required. Many people express strong emotional attachments to the tall greenery in their neighborhoods and are quite vocal about City actions to eliminate trees.

Sentiments among environmentalists and community leaders ran high against tree removals located in the path of Endeavour’s transport. Although the CSC agreed to replacements at a two-for-one ratio (and four-to-one in some locations), opponents were not satisfied in the least. Calls went out for environmental studies and threats of lawsuits were floated as neighborhoods united to “save the trees.”

“Clearly, public opinion against removals grew rather rapidly, so we enlisted our public affairs team, Mayor’s Office staff and Public Works Commissioners to assist with addressing and resolving the community’s concerns,” Jones said.

A series of weekly meetings were held with community representatives, CSC staff and the Public Works team to answer questions as well as mediate concerns brought up by the community. By the time the move date came, all issues had been ironed out and all parties were comfortable with the Endeavour’s movement through the neighborhoods of South Los Angeles.

**Travelling through South L.A.**

Moving day finally arrived on October 12 at 1:00 a.m. Both Jones and Patel were in the Command Post Headquarters and shared the cautious optimism in the air as the shuttle prepared to leave LAX.

“Every detail or scenario we could think of had been discussed, analyzed, and sometimes discussed again, so we had great confidence in the transport plan,” said Patel. “Still, in the back of our minds, we knew that the unexpected could still occur even with the best, thought-out plans. So, we stayed alert.”

It wasn’t long before the first adjustment came about as Endeavour tried to negotiate the curving road as it departed the airport. Fortunately, Public Works crews were on hand to remove obstructions that might add to the shuttle’s delay.

Staying as close to schedule as possible was an ongoing effort due to the multiple effects of delays. Already, crowds of thousands were lining the streets in anticipation of seeing Endeavour, some vowing to camp out until the spacecraft appeared. Some major streets were barricaded as well and motorists were trapped in long queues as they tried to avoid congested areas.

The crowds reflected the diversity of Southern California as an array of...
ethnicities stood side by side, waiting patiently, then joyously responding and hugging each other as the shuttle came into view.

Toddlers, teens, young adults and senior citizens were clearly astonished by the sight and determined to capture it on camera and film. Grade-school children walked away saying, “Wow! I want to be an engineer when I grow up!”

Surprisingly to some, the Los Angeles Police Department reported no arrests or incidents of significance despite the incredible turnout of people.

“Hundreds of thousands came out for Endeavour and there was no trouble at all,” Jones commented. “The response was all positive. I believe the excitement and enjoyment of witnessing this once-in-a-lifetime event was the main emotion on display.”

Public Works staff were involved throughout the shuttle’s route. Walking or driving closely behind the Endeavour were street maintenance workers, construction inspectors, urban foresters, and streetlighting technicians assisted by engineers, most significantly, Jones and Patel.

At Home at Last
After nearly three days, Endeavour finally made it to its final home—the California Science Center. Greeted by thousands of people, the shuttle came to rest in the Samuel Oschin Display Pavilion at the CSC where visitors thronged the site for next week.

The temporary exhibit will house Endeavour until CSC completes construction of the final display. The shuttle’s popularity remains so high that reservations are needed to view the amazing flying vehicle.

“It was exciting to be involved in this whole process,” Jones said. “It was an interesting project, a lot of work in a short amount of time. Many people came together and understood how important and exciting this was for the city. We were given a job, set out to be successful in doing our job, and we were.”

Cora Jackson-Fossett can be reached at (213) 978-0319 or cora.jackson@lacity.org.

LA Bureau of Sanitation vehicle and Endeavour shuttle.

Bring national and global attention to your environmental engineering and science projects: Enter the 2013 Excellence in Environmental Engineering & Science Competition. Winning entries automatically qualify for the International Water Association’s Project Innovation Awards. In 2012, three E3 Grand Prizes and one Honor Award went on to earn IWA Global Awards. Entries are due February 1, 2013.

Showcase your environmental communication project: Enter the 2013 Environmental Communications Awards Competition. Entries are due March 15, 2013.

Contact Sammi Olmo at JSOlmo@aaees.org for details.
IAEM’s Certification Program: The ultimate credential in emergency management

Kate Walker
CEM Administrator
International Association of Emergency Managers
Falls Church, Virginia

S News named Emergency Management Specialists as one of the 50 best jobs in 2011 and forecasted optimistic growth over the next decade. It reported, “The Bureau of Labor Statistics expects employment to grow by 2,800, or 22 percent, between 2008 and 2018.” In such a popular and growing field, professionals can distinguish themselves by earning the ultimate credential in emergency management, the Certified Emergency Manager (CEM®), and may even find themselves at a disadvantage without one.

Today, the International Association of Emergency Managers (IAEM) is detecting more and more hiring sources that give preferential treatment to those who have the CEM or Associate Emergency Manager (AEM) designation. Julie Kachgal, CEM, Manager of Emergency Planning at Warner Bros. Studio, said, “The CEM helped me get my job because it packaged my qualifications and validated all aspects of an experienced emergency manager for the hiring executive.”

IAEM created the internationally recognized CEM and AEM programs to elevate and maintain professional standards within the emergency management field. The CEM and AEM designation is awarded to distinguished professionals who have demonstrated a strong understanding of the emergency management field by documenting knowledge, experience, work history, trainings and contributions to the profession. “The extensive time and effort needed to achieve certification gives responders and operational staff a broad perspective on how government agencies at all levels must respond to emergencies,” says Edward Gabriel, CEM, Principal Deputy Assistant Secretary for Preparedness and Response, U.S. Department of Health and Human Services. “This understanding makes a significant difference in our collective ability as responders to support communities across the country during emergencies and disasters.”

Development of the CEM and AEM programs was supported by the Federal Emergency Management Agency (FEMA), the National Emergency Management Association (NEMA), and a host of allied organizations beginning in 1988. A Professional Standards Advisory Council was formed of subject matter experts representing all aspects of emergency management and related fields. After completing an extensive job analysis, IAEM’s Professional Standards Advisory Council identified the knowledge, skills and abilities (KSAs) needed to accomplish the most frequently performed job duties within the emergency management field and based the certification requirements on these KSAs.

There are currently 1,363 CEMs and AEMs worldwide. The first class of CEMs was awarded their designation in 1993. In 2008, the AEM certification was created for candidates who do not yet meet the requirements of the CEM (see graph outlining requirements). Up until December 31, 2013, non-U.S. candidates may substitute two years of additional experience in a disaster/emergency management position for each year of college credit lacking (based on 30 credits per academic year) or eight years of disaster/emergency management experience for a total of 11 years of full-time comprehensive emergency management experience for no recorded college credit.

Detailed information for each of these sections can be found in the most recent application. Applications may be downloaded from the IAEM website under the Certification page by clicking on the “Request a CEM/AEM Application” link. In order to maintain the designation, CEMs and AEMs are required to recertify every five years by documenting 75 hours of continuing education within the emergency management field, 25 hours of general management training, six professional contributions and submitting the recertification fee.

Candidates interested in earning the designation can reference www.
iaem.com for important information on getting started. Achieving the certification is a two-step process. Candidates must sit for and pass the written multiple choice exam and have their credential application reviewed by the CEM Commission. Candidates may decide which step they would like to complete first, but from the date of completing the first step, candidates have one year to complete the second step. Candidates must submit the certification fee ($325 for IAEM Members; $450 for Non-IAEM Members) to be eligible to sit for the exam and have their credential binder reviewed by the CEM Commission.

The certification fee entitles candidates to:

- Sit for the exam twice (if candidates do not pass the exam on the first attempt)
- Review of their certification packet by the CEM Commission twice (if a candidate’s credential binder is not approved the first time, candidates have 90 days from the date on their notification letter to submit supplemental information. Application binders that were deemed incomplete during the first review will be reviewed a second time and will either be approved or rejected).

Candidiates who do not pass the exam on the second attempt or receive notification that their credential binder has been rejected must pay the certification fee again and start the process from the beginning. All certification fees are non-refundable.

IAEM has developed many helpful resources to help candidates through the certification process. A study guide is available as candidates prepare for the exam and IAEM offers information on obtaining a mentor to assist individuals through the process. Many candidates also find the CEM/AEM Examination Preparatory Course extremely beneficial. Courses are taught by current or past CEM commissioners who can answer individual questions about the process. Upcoming offerings can be found on the IAEM website or contact the CEM Administrator, Kate Walker, to coordinate a prep course in your area.

IAEM continues to improve the CEM/AEM program. Current projects include creating an online application for added convenience for the candidates, as well as working towards ANSI accreditation. Independent verification of the program achieved through the accreditation process will strengthen the value of the CEM/AEM mark.

Questions about IAEM’s certification program may be directed to the CEM Administrator, Kate Walker, at (703) 538-1795 (ext. 1777) or kwalker@iaem.com.
City of Beloit Department of Public Works Hazmat Team

Innovation meets reality

Cheryl Simplot
Environmental Coordinator
City of Beloit, Wisconsin

General Description: Provide a brief general description of the procedure, loss control activity or program being submitted.

Most serious emergencies are created by accident. Hazardous materials in various forms can cause death, serious injury, or long-lasting health effects. Our goal is to minimize the damage to public health, the environment, businesses, homes, and other property throughout the city. Large quantities of potentially hazardous products are transported daily through the City of Beloit via truck and rail or are stored at fixed facilities.

The City’s Department of Public Works (DPW) protects the community through two major programs headed by the DPW which are: (1) Spill Control Prevention Plans (SCPP) and (2) Hazardous Materials Response. Over 750 businesses are permitted by the Environmental Staff. Part of the permitting process is to identify processes or chemicals used at the facilities that may pose a threat to public safety or the environment. In the unfortunate event of a spill, it is up to the City of Beloit Hazardous Materials Team to properly and safely identify any unknown substance. City employees can respond within 30 minutes during working hours and generally within one hour for nonworking hours.

In order to keep our employees safe when identifying potential hazardous materials, the City of Beloit provides extensive training, personal protective equipment and has purchased custom tires to fit our steerable pan-and-tilt sewer camera tractor. The tractor equipped with these particular wheels can climb over curbs, steer around fixed obstacles, and drive into confined space areas while the operator controls the tractor from the safety of our camera truck hundreds of feet away. A four-gas meter has also been attached to the tractor to test for hydrogen sulfide, carbon monoxide, oxygen content levels, and combustibles.

Purpose: Describe the problem, reason or circumstance that led to the development of this procedure, loss control activity or program.

Facilities covered by Emergency Planning and Community Right-to-Know Act (EPCRA) require that anyone who stores potentially hazardous chemicals submit an Emergency and Hazardous Chemical Inventory Form to the Local Emergency Planning Committee (LEPC), the State Emergency Response Commission (SERC), and the local fire department annually. The City’s program requires the disclosure of all bulk or hazardous chemicals stored onsite and facility drawings with pertinent sanitary and storm drains associated with the facilities. The advantage to having a City Hazmat Team is that incidents are responded to usually within 30 minutes. Oftentimes the City Hazmat Team is called out to identify unknown containers or to clean up product spills on roadways due to vehicle accidents, spilled or abandoned material or releases from fixed facilities within the community. The City’s Laboratory lends a hand on material identification. Before cleanup procedures can start, the team must first identify the hazards of the substance and test atmospheric conditions. In the past, the hazardous materials team would send a team into the hot zone to physically identify an unknown substance. Though the team members have the proper PPE donned, there are still hidden dangers that can occur when a team member is in the hot zone. We feel it is the best practice to not put a human in this precarious situation. Rather, we will send the rover in to do the preliminary investigation. The City has two certified trainers on staff and enough equipment and PPE (including SCBAs) to accommodate two teams of six to enter the hot zone.

The City’s sewer camera is converted over to a hazmat rover in minutes by attaching eight-inch radial wheels and tracks along with a four-gas meter and auxiliary lighting.
Program Development and Implementation: Who participated and how much time did each participant devote to this product/program? Were outside consultants used? Was the program developed in cooperation with labor unions or other organizations?

Over thirty members of the DPW including Water Resources, Operations, and Parks volunteer and train together to protect the public and environment in the city. The City provides free hazmat training for local industries such as Frito Lay, Genencor, Fairbanks Morse and commercial businesses such as Pilot Oil. The City has two eight-hour refresher classes that include classroom and hands-on training.

Significance: Explain why this entry is important to risk management/safety in the public sector. What concepts, standards, practices or techniques are displayed or advanced? Does the program protect life? Reduce exposures? Was it developed to ensure regulatory compliance? Improve quality of life? Has the program been accepted?

Using already-owned City equipment and current personnel for emergency response is a benefit to the community as a whole with little additional costs. For example, implementing the use of an unmanned rover (sewer camera) with an attached four-gas meter to identify an unknown substance, we have decreased the loss potential for CVMIC and the City of Beloit. We have developed a new standard in our program for how we go about identifying unknown substances. Although utilizing rover-type cameras is not necessarily a new concept, we have adapted the tools that we have at our disposal to make the workplace safer.

The City owns two jet/vactor trucks used for sewer cleaning and two street sweepers that may be used for cleanup. For example, in the event of an oil spill the vactor unit is used to pressure-wash the roadway and vacuum up the material for disposal. This ensures safe travel for motorists.

Transferability: Describe how this product/program can be adapted for use by other CVMIC members. Would significant modifications or costs be required for implementation? Would implementation be subject to bargaining?

The City of Beloit has won two first-place awards involving hazardous materials for programs that other communities could implement at very little cost. The City DPW’s Hazmat Awareness Program for all City employees won first place in 2009. In 2011 the City’s DPW won first place with the sewer “Rover” camera. Other CVMIC members with a sewer camera similar to the one the City of Beloit has could lower their risk of injury or even death by equipping their sewer tractor with the hazardous material rover kit. A one-time investment of around $1,000 covers the cost to modify the camera with tracks so that it may climb curbs and debris. The City of Beloit feels that $1,000 is a modest amount when dealing with unknown, potentially hazardous, substances. You must also factor in the training requirements to set up a hazardous material team. Most of our employees are at least trained at the awareness level. Some 30 employees that volunteer to participate on the team are trained at the 16- to 24-hour level. Some even have the 40-hour training. OSHA requires annual refresher training and frequent practice sessions.
Cost/Benefits: What cost savings and/or benefits could a member realize by implementing this product/program? Describe how the impact of the program is assessed. Does it impact on operating costs? Improve productivity? Describe the cost of development and implementation (staff time, resources, and other expenditures).

In-house training is absorbed by the Water Resources Division as part of the Environmental staff training budget. This also provides the City with some expertise in the wastewater and water utilities for possible chemical releases.

As previously stated, the cost to retrofit and implement our existing tractor camera is just shy of $1,000. Savings will be realized by reducing the amount of time it would take to dispatch a full team just to identify the hazards prior to cleanup or waiting and paying for an outside Level “A” Response Team. If one of our employees was to be hurt or killed when dealing with a hazardous material, the City could be liable for hundreds of thousands of dollars in losses attributed to work comp time, lost production, and above all we cannot replace the health or life of one or more of our employees.

Originality/Innovation: What makes your approach unique or innovative? Describe the need or problem addressed. Where did the idea for the program or product come from? Was it adapted from a program developed elsewhere? If so, how was it modified?

The City DPW has worked together to think outside the box and come up with creative uses for equipment already owned by the City. Therefore, no significant cost has been associated with these new programs. The City of Beloit tractor-mounted scissor-jack camera is unique in the fact that this unit has a dual purpose. On normal work days, this camera is used to take video of the City’s 170 miles of sewer. In the event of hazardous materials spills, the camera can be seamlessly transitioned into an unmanned rover camera capable of identifying hazardous materials. The attached four-gas meter unit used to test the atmospheric conditions before sending anyone into the hot zone may be the first of its kind. The ingenuity and resourcefulness used to bring this project to fruition will help the hazardous materials team do their job more efficiently, effectively and safely for years to come. The days of sending in a canary are over.

Combined hazmat and spill response training with area businesses allows many to be trained here locally at no cost. This allows us to work together and understand each entity’s unique perspective on protecting the public and the environment during emergency operations within the city.

For example, in past years Pilot Oil, a large truck stop, had an average of two spills a month in which the Beloit Fire Department, the DPW and an outside contractor responded. In 2011 Pilot Oil trained with City staff and modified one of their stormwater catch basins to catch spills in order to allow sufficient response time for cleanup. Based on this training and modification to the catch basin, Pilot Oil was able to handle each of their spills on their own with no calls to the City to assist. By training with the City, using their Spill Control Prevention Plan and own hazmat people, this has saved Pilot Oil thousands of dollars for each call. This has also improved public safety conditions at the large truck stop surrounded by many retail shops and a major highway.

Cheryl Simplot can be reached at (608) 364-5722 or simplotc@ci.beloit.wi.us.
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“You shared information about ‘driverless vehicles’ coming on the market in California in a past issue. We have been discussing how these vehicles, if and when they become the norm, would impact our fleet operations. Has anyone thought that far ahead yet?”

If so, most likely, it’s been the California Highway Patrol. Think about it. How will you enforce the HOV lane if the driverless vehicle travels there with only one person inside? Does the computerized driver count as an additional occupant with the human one being the first? And what about accident claims? Would you just assume that any accident that occurred was caused by the “human driver” of the second vehicle involved because the computer operating the driverless vehicle couldn’t possibly have caused an accident?

There will be lots of implications for the workplace, too. Agencies will be required to develop new policies dealing with fleet policy to safety rules, productivity management and vehicle (instead of driver) training. Some of the questions will be philosophical: Is it in the best interest of your agency to adopt the driverless cars as acceptable equipment in your fleet? If not, will you be subject to lawsuits from employees who may feel you are not providing the safest vehicle option for them? What might the implications be about the driver who does or does not choose to use the driverless vehicle? What will costs be for operation and what kinds of training will you need? Will your mechanics be replaced with computer technicians? Lots of things to think about, and while it may seem like the “future” is far off, it will be here before you know it.

“Four years we have been working to have Qualification-Based Selection (QBS) be approved across the country for engineering, architectural, and land surveying professionals for our city projects. Now I’m hearing talk of something called ‘Best-Value Contracting.’ How is this different? Or is it?”

There is a difference since “BVC” is for contractors and not engineers and architects. The premise for spending public money has always been to award contracts for government projects to the lowest qualified bidder. Sometimes, there are even more important considerations when selecting a contractor than the lowest qualified bid. Sometimes equally important considerations may be how quickly a project is completed or life-cycle costs which are just as important as the price, and that’s when “best-value contracting”—which allows governments to consider factors other than price—can deliver better results for taxpayers.

The City of Saint Paul, Minn., utilized the process after contractors were not able to meet prequalification requirements following the economic downturn. The project needed to go forward with the Housing and Urban Development funding already committed. Proposals came in and were first evaluated based on quality criteria such as past experience with similar projects, success at meeting construction schedules, safety records and value-engineering ideas. All were far above the city’s budget for the project. During the interview process the City has asked proposers which had earned the highest quality scores for additional value-engineering ideas to reduce project costs. Once the general contract was chosen, the company worked with the project’s architect and the City to get costs within shouting distance of the budget. Using clear criteria, including separate evaluation processes for quality and cost, addressed any concerns about the process being subjective.

Best-value contracting has the potential to be particularly beneficial on large infrastructure projects. Over the useful life of roads and bridges, for example, operation and maintenance generally cost 10 times the original construction price. But traditional low-bid procurements only focus on construction costs. Best-value contracting gives governments a tool for choosing options that might cost more up front but will be far cheaper to operate and maintain. Used wisely, best-value contracting gives the public sector the ability to make procurement decisions in
taxpayers’ long-term interests, and it gives officials the data to defend those decisions. Could be a useful tool if approved by your state.

Q  “We’re beginning the Accreditation process and would like to have some training for a couple of our people. Are there any workshops scheduled for the spring?”

A  The only national APWA Self Assessment/Accreditation workshop scheduled at the time of this writing will be held on February 1, 2013 in Shoreline, Wash. Registration is open now on the Calendar of Events page of the APWA web site, www.apwa.net. Options for Onsite Workshops are still available if you’d like to train your entire staff, at your own location. For more information about these workshop opportunities, please contact me at adaniels@apwa.net.

Ask Ann

Please address all inquiries to:
Ann Daniels
Director of Credentialing
APWA, 2345 Grand Blvd., Suite 700
Kansas City, MO 64108-2625
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### JANUARY 2013
- **11-15** Interlocking Concrete Pavement Institute – Annual Meeting, Indianapolis, IN, www.icpi.org
- **13-17** Transportation Research Board – Annual Meeting, Washington, DC, www.trb.org
- **14-17** Society for Protective Coatings – Paint & Coatings Expo, San Antonio, TX, www.sspc2013.com
- **17** APWA Click, Listen & Learn, “How to Develop Effective Public Works Exhibits,” (800) 848-2792, www.apwa.net
- **29-31** Underground Construction Technology – International Conference & Exhibition, Houston, TX, www.uctonline.com

### FEBRUARY 2013
- **5-8** World of Concrete, Las Vegas, NV, www.worldofconcrete.com
- **7** APWA Click, Listen & Learn, “Public Works and Mutual Aid,” (800) 848-2792, www.apwa.net
- **7-9** Annual New Partners for Smart Growth Conference, Kansas City, MO, www.newpartners.org

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- **IFC** = Inside Front Cover; **IBC** = Inside Back Cover; **BC** = Back Cover

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