ROANOKE’S
SEALED COMPACTOR PROGRAM:
SERVING THE MARKET
See Page 34
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NORTH AMERICAN SNOW CONFERENC
2017

DES MOINES, IOWA
APRIL 23-26, 2017

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

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Most mornings begin with the sounds of birds chirping quietly, maybe a car passing by with people on their way to work, and the familiar sound of a collection truck working its way through the neighborhood. Collection in your neighborhood may be with a front-end truck, maybe an automated sideloader, or might still be by hand. The collector might be picking up a single stream of waste material or possibly four streams of waste, recycling, kitchen organics and yard waste. There are trucks covered in artwork rolling through numerous communities, countless stories of kids waiting every week for their truck to drive by, and school kids touring facilities to learn about waste processing. Though it is different in every city and every town or county in North America, it is clear that the industry and its people help make up the fabric of our communities.

In November 2016, the EPA released a fact sheet indicating that the U.S. generated 258 million tons of municipal solid waste and 534 million tons of construction and demolition waste. Material managed as part of a fully integrated modern waste management program now becomes a commodity that generates revenue, protects the environment and creates jobs. The waste management industry contributes to the local economy through job creation in the areas of collecting, hauling, sorting, manufacturing, and fuel and power generation which diversifies and supports local development. In one community, waste was once processed as a single stream; now there are facilities that receive and sort materials into over 50 separate streams, generate electricity from landfill gas and anaerobic digestion, produce biofuels, and have apps and programs that interact daily with the community to encourage waste diversion.

In previous editions of the APWA Reporter’s Solid Waste Management issue we have covered topics such as new technology, advanced facilities and new equipment. In this edition we present a human focus on the waste industry. Every day over 410,000 Americans go to work in the waste industry to help manage our wastes in a safe, effective and convenient way. Your collector, your transfer station attendant, landfill operator and other public works professionals are all involved in your waste management system.
I hope you enjoy this edition and that the information and stories you read are useful for your waste management programs as well as your other public works operations. Inside you will find articles on apprenticeship programs to develop new employees as well as hiring people for customer service skills rather than technical expertise alone.

We are entrusted to deliver the services our communities need through engaged and valued public works professionals. These articles will help you focus on developing and engaging those helping to deliver your waste management programs and services. Enjoy and please recycle!

“The key to implementation of sustainable practices is following a long-term program based on persistence, not insistence.”


“Human diversity makes tolerance more than a virtue; it makes it a requirement for survival.”

– René Dubos (1901-1982), French-American microbiologist and Pulitzer Prize-winning author

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

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www.apwa.net     /   March 2017     /   APWA Reporter     3
PWA Executive Director Scott Grayson met with Congresswoman Brenda Lawrence (MI-14) on the Hill during his recent trip to Washington, D.C. The two discussed how they have shared common ground, having both served as elected officials in local municipalities. The Congresswoman shared the importance of providing public works professionals with the tools and funding they need to maintain our water systems, roads and bridges.

Also during the congressional visit, Grayson met with Congressman Bill Huizenga (MI-02) to discuss several public works-related topics, including the accreditation opportunities provided by APWA. Grayson emphasized the value added by accreditation, not only for the short term, but for the future as well. Huizenga noted the importance of having properly trained public works professionals working on behalf of his district and shared his emphasis on the importance of the water ways in western Michigan and their role in public works on a daily basis.

Huizenga’s district includes the cities of Grand Haven and Holland, both of which are located on the shores of Lake Michigan, which is a key source of water in the region. APWA Government Affairs looks forward to working with the congressional leaders on mutually beneficial projects during the 115th Session of Congress.
Regardless of the work done, the technology available or the danger involved, it all seems to come down to the capabilities of the person tasked with the job. The solid waste industry is facing a core issue prevalent in public works: difficulty in recruiting and retaining great staff. To address this need, this year’s Solid Waste Management Committee has focused many of their activities on the human aspect of the solid waste industry.

The Solid Waste Management Committee sponsored a Click, Listen & Learn in February focused on addressing the staffing challenge. “Dynamic Employees – Programs to Recruit, Train, Develop and Retain Great Staff” provides information on working with high schools to identify good candidates as the City of Lakeland, Fla., has done. Insight into developing an apprenticeship program is provided by the City of Phoenix, and the City of Durham, N.C., gives tips on connecting with the community by implementing a culture of service. If you missed the live version of the program, you can still access it in the Members’ Library on the APWA website.

With their weekly visit, the solid waste professional is often the most frequent face of public works. It seems like every month there is a news article about the wonderful interaction between local trash collectors and neighborhood kids. However, with social media, all interactions, positive or negative, can quickly go viral. Many agencies have recognized this and a variety of programs are taking root across the continent. You can read about some of these initiatives and many others within this edition of the APWA Reporter.

There are many great solid waste managers across the continent and APWA’s Solid Waste Professional Manager of the Year award is a great way to recognize them. The nominations for the award close every year on March 1. The 2016 winner was Mike Mundell, the Solid Waste Manager for New Braunfels, Texas.

Previous winners include:

- 2016: Mike Mundell, Solid Waste Manager, City of New Braunfels, Texas
- 2015: Chris Bussen, Solid Waste Superintendent, City of Lee’s Summit, Missouri
- 2014: Harvey E. Howard, Supt. of Waste Management, City of Norfolk, Virginia
- 2013: Monica Bramble, Solid Waste Manager, City of North Port, Florida
- 2012: Carl Michaud, Dir Dept of Environmental Services, Hennepin County, Minnesota
- 2011: Steve Wamback, Solid Waste Administrator, Pierce County, Washington
- 2010: Richard L. Wieman, Solid Waste Utility Manager, City of Columbia, Missouri
- 2009: Ronnie M. Owens, Commissioner, City of Cleveland, Ohio
- 2008: Edwin H. Marr, Solid Waste Administrator, City of Greenville, South Carolina
- 2007: David A. Pelser, Director of Waste Mgmt & Recycling, County of Sacramento, California
- 2006: Robert A. Anderson, Supt. of Solid Waste, City of Columbia, South Carolina
- 2005: Gerald A. Latta, Solid Waste Services Director, City of Raleigh, North Carolina
- 2004: Nancy Nevil, Environmental Waste Services Manager, City of Plano, Texas

The national Technical Committees provide insight as to the major issues, concerns and challenges facing the various

continued on page 6
Technical Committees offer members the opportunity of public service on a national scale and a chance to participate in the process of constructive change in the public interest. The solid waste infoNOW group is available to all APWA members and provides a means to ask questions to the committee and to share insights with other solid waste professionals. If you have not already signed up, go to the Resources tab on the APWA website and select APWA Connect. The committee encourages members to utilize this to help them focus on what is important to you in regards to challenges and issues facing today’s solid waste manager.

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

This year’s committee is chaired by Trent Tompkins, the Director of Collection Services for the City of Edmonton, Alberta. The Board liaison is William E. Spearman, III, P.E., WE3 Consultants LLC, Saluda, South Carolina. The members of the committee are:

- Ms. Monica Bramble, Assistant Public Works Director, City of North Port, Florida
- Michael Foote, Principal, Foote Consulting, Gillette, Wyoming
- Demarcus Antwain Marshall, Ph.D., Public Works Superintendent, City of Valdosta, Georgia
- John A. Trujillo, Public Works Director, City of Phoenix, Arizona
- Steve C. Wamback, MPA, PWLF, Sustainable Resources Administrator, Pierce County Public Works & Utilities, Tacoma, Washington

If you would like more information on the committee or would like to get involved, please contact the committee staff liaison, Phyllis Muder, at (816) 595-5211 or pmuder@apwa.net.

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**FLEET CONSTRUCTION INSPECTION STORMWATER**

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Hear what your colleagues are saying about APWA Certification!

The exam questions were targeted at an individual having gained knowledge by working in the field. The APWA certification program is truly meaningful because it’s something you can’t obtain without real experience.

Being certified by APWA gives you respect, recognition and credibility because you have been tested in your area of expertise.

City regulators have acknowledged that having a CSM as part of a local government gives a more comprehensive approach with better understanding of what is required by the State/EPA regulators.

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It’s Your Time. Get Certified.

For more information visit: apwa.net/certification
Waukee, Iowa, is a city nestled just west of the state’s capital Des Moines, and it has a population of nearly 20,000. That population doubled in the last decade. With such rapid growth, City officials were outgrowing their existing Public Works Department space.

“When I started working for the City in 1998, the Public Works Department was housed in two 5,000-square-foot metal pole buildings, which was adequate for the five of us in the department,” said Public Works Director John Gibson. “By 2005, the department had quadrupled, and we were forced to put people wherever we could. Staff was split up into a total of six buildings across the city, with most of that space leased from private business owners. It just wasn’t working.”

As employees began to spread out to additional buildings, City officials began to plan for the future. It was obvious that more employees and equipment would be needed to keep up with the thriving community. In 2007, the Waukee City Council established a new Urban Renewal Area, and the City purchased 16 acres of farmland on which to eventually build a new facility.

Waukee architecture firm Design Alliance had a bold new design in mind for the Public Works Department, and general contractor Construction Services, Inc. was on board to build it. The estimated cost of the project at that time was $4.3 million. The City planned to pay for it with the use of Tax Increment Financing and Utility Revenue funds. The goal was to pay for the project without raising property taxes.

As often happens with construction projects, the estimated $4.3 million budget continued to climb throughout the planning process. But, the City received some positive news in 2009 concerning financing.

Iowa’s then-Gov. Chet Culver launched the I-JOBS Local Infrastructure Grant Program, which was a $750 million, three-year initiative to create jobs,

continued on page 8
strengthen the state's economy and rebuild several critical areas of the state's infrastructure.

“When the program started taking applications, we already had two years of planning behind us,” said Gibson. “Our plan also incorporated green practices and energy-saving features, so that helped boost our application to the top of the heap. We were very fortunate to have our application approved by the I-JOBS Board.”

With the new budget for the project now at $6.9 million, the I-JOBS Grant paid for half of that with $3.45 million awarded to the City of Waukee.

Construction began in April 2010, and it couldn’t happen fast enough. The offices were flooded by heavy rains in June of 2010. But, things were looking up as the ribbon cutting for the state-of-the-art 76,000-square-foot building was held one year later on June 2, 2011. At that point in time, the Waukee Public Works Department had 35 employees. The building now holds 50 City employees in the Public Works, Parks & Recreation and Human Resources Departments. It also is home to 36 pickup trucks, 12 dump trucks, and 39 units of light and heavy equipment.

“It is amazing to be able to have all of our equipment inside,” said Waukee Streets Superintendent Dan Werts. “People who visit our building comment on how clean everything looks and how nice the equipment looks. The employees take more pride in their equipment now too, which helps it last longer.”

If you were to walk into the Waukee Public Works Department building today, you would see:

- a 13,000-square-foot reception and administration area featuring offices, open work spaces, and a copier and supply room.
- additional offices, a first-floor training room, a second-floor conference room and a large carpeted space used for community youth activities.
- one large shared office for the City’s Engineering team as well as a LEED-equivalent engineering bay with occupancy sensors, co-ray-vac heating, exterior LED lighting and more.
- a storage area for the Water Department – there are currently 94 miles of water main within the city.
- a Wastewater Department storage area.
- the City-run Gas Department area. The utility currently serves 6,200 meters.
- a stainless steel wash bay and wash bay exit with air doors, salt storage and deicing chemicals.
- the Equipment Services Area which features two hoists, a crane and a high-quality exhaust system.
- the Streets Department and bay featuring 21 overhead doors.
- a sign fabrication room.
- locker, laundry and custodial rooms.

“The new building has been such a blessing because all staff and equipment are in one location,” said Gibson. “Waukee residents are being served at a higher level because we are able to be more efficient. And, the facility will continue to serve us appropriately for years to come.”

The facility itself was a win for the City, but the benefits don’t stop there. Thanks to the green-minded planners and builders, the utility costs have improved as well. At the former facility, the annual per-square-foot cost for gas and electric expenses totaled $1.74. With the new building, the cost is only $0.51 per square foot.

“We’re obviously paying to heat and power a much larger building, but..."
the energy-efficiency difference has been startling,” Gibson said.

As far as the old two-building outfit in which the department used to be housed, don’t worry—it still has a purpose. The City uses the structures to store road salt and additional machinery.

And, in collaboration with the Waukee Community School District, the Public Works Department now has a fueling station just down the hill. The district’s Bus Maintenance Facility officially opened in January of this year, and features a fueling station which they share with the City.

“We partnered on this project with the district because it’s good for the community,” said Gibson. “It also allows our staff to fill up their vehicles at a convenient location using fuel purchased at a bulk rate, thus saving the City thousands of dollars a year.”

The Waukee Public Works Building is truly a modern gem in a growing city. And, you can see it for yourself! If you’re attending the 2017 North American Snow Conference in Des Moines, you are in luck. Buses will take participants the short drive west to tour the Waukee facility on April 26, 2017. We hope to see you there.

Summer Evans can be reached at (515) 978-7905 or sevans@waukee.org.

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Your Vote in APWA Does Count

As an APWA member, you will have the opportunity to vote for members of the APWA Board of Directors between July 4, 2017 and August 5, 2017:

- APWA President-Elect
- At-Large Director in the functional area of Fleet and Facilities
- Regions I, II, V, VI and VIII Regional Directors (by APWA members in those respective regions)

The ballot will be available for online voting between July 8 and August 7, 2016 on the “Members Only” section of the APWA website. There will also be a voting icon on the homepage of the website. If you are unable to vote online, you may request a paper ballot from Teresa Hon at (816) 595-5224. Additional reminders of the voting process will be through the APWA website; via e-mail to every member for whom we have an e-mail address; and in future issues of the APWA Reporter.

If you have questions, please contact Teresa Hon at (816) 595-5224 or thon@apwa.net.
APWA and the APWA Iowa Chapter invite you to join us in the great Midwest for the 2017 North American Snow Conference in Des Moines, IA, April 23-26, 2017. More than 2,000 snowfighters and other public works professionals are expected to attend what we are anticipating will be the biggest Snow Conference ever! This year’s Show for Snow has it all — from expert-led snow and ice education sessions to an exhibit floor full of excited vendors who can’t wait to show off the latest technologies and solutions your community has been looking for! Don’t wait another minute, make plans today to join us in Des Moines for the 2017 Snow Conference!

SATURDAY, APRIL 22
3 – 5 p.m.
Winter Maintenance Subcommittee Meeting
(At Marriott)

SUNDAY, APRIL 23
4:30 p.m. – 6:30 p.m.
Exhibit Hours

8 a.m. – 4:30 p.m.
Winter Maintenance Supervisor Certificate Workshop

8 a.m. – 4:30 p.m.
Emergency Management Committee Meeting

Time TBD
Fleet Services Committee Meeting

12:30 p.m. – 4:30 p.m.
Traffic Incident Responder (TIM) Course

1 p.m. – 4:30 p.m.
Education Sessions

4:30 p.m. – 6:30 p.m.
Exhibit Opening and Welcome Reception on the Exhibit Floor

MONDAY, APRIL 24
9 a.m. – 3:30 p.m.
Exhibit Hours

8 a.m. – 9:30 a.m.
Opening General Sessions

9:30 a.m. – 11 a.m.
Coffee Break on the Exhibit Floor (Non-compete Exhibit Time)

9:30 a.m. – 4 p.m.
Leadership and Management Committee Meeting

9:40 a.m. – 10:25 a.m.
Exhibitor Solutions Theater

10:30 a.m. – 11:15 a.m.
Exhibitor Solutions Theater
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tr>
<td>11:00 a.m. - 12:00 p.m. (noon)</td>
<td>Education Sessions</td>
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<tr>
<td>12:00 p.m. (noon) - 2:00 p.m.</td>
<td>Lunch on the Exhibit Floor (Non-compete Exhibit Time)</td>
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<tr>
<td>12:50 p.m. – 1:35 p.m.</td>
<td>Exhibitor Solutions Theater</td>
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<tr>
<td>2 p.m. - 2:50 p.m.</td>
<td>Education Sessions</td>
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<td>2:30 p.m. – 3:15 p.m.</td>
<td>Exhibitor Solutions Theater</td>
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<td>2:50 p.m. - 3:30 p.m.</td>
<td>Refreshment Break on the Exhibit Floor (Non-compete Exhibit Time)</td>
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<td>3:15 p.m.</td>
<td>Prize Drawings on the Exhibit Floor</td>
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<td>3:30 p.m. - 5:30 p.m.</td>
<td>Education Sessions</td>
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<td>10:40 a.m. - 11:25 a.m.</td>
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<td>11:00 a.m. - 1:00 p.m.</td>
<td>Lunch on the Exhibit Floor (Non-compete Exhibit Time)</td>
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<tr>
<td>11:30 a.m. - 12:15 p.m.</td>
<td>Exhibitor Solutions Theater</td>
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<tr>
<td>1:00 p.m. - 3:15 p.m.</td>
<td>Education Sessions</td>
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<td>3:30 p.m. - 5:00 p.m.</td>
<td>Closing General Session</td>
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<td>6:00 p.m. - 9:00 p.m.</td>
<td>Snow Celebration (at World Food Prize Hall of Laureates)</td>
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**TUESDAY, APRIL 25**

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<td>8 a.m. - 1:00 p.m.</td>
<td>Exhibit Hours</td>
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<td>8 a.m. - 8:50 a.m.</td>
<td>Education Sessions</td>
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<tr>
<td>8:50 a.m. - 10:10 a.m.</td>
<td>Coffee Break on the Exhibit Floor (Non-compete Exhibit Time)</td>
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<td>9:00 a.m. - 9:45 a.m.</td>
<td>Exhibitor Solutions Theater</td>
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<td>9:45 a.m.</td>
<td>Prize Drawings on the Exhibit Floor</td>
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<td>9:50 a.m. - 10:35 a.m.</td>
<td>Exhibitor Solutions Theater</td>
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**WEDNESDAY, APRIL 26**

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<th>Time</th>
<th>Event</th>
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<tr>
<td>8:00 a.m. - 12:00 p.m. (noon)</td>
<td>Technical Tour</td>
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The City Beautiful, the Experience of a Lifetime

Rick Howard, P.E., PWLF
Public Works Director
City of Orlando, Florida

We are thrilled you are considering coming to Orlando for the 2017 PWX. There are many reasons why Orlando is one of the most visited cities on the planet. There are many reasons why over 66 million people choose Orlando over other travel destinations. Orlando and the Central Florida area are home to many world-class attractions, new sports and entertainment venues and the second largest convention center that will host this year’s PWX.

After the show, take time to visit our charming neighborhoods, enjoy our tropical climate and some of the best dining in the South. Visit our unique shops, enjoy our parks and lakes and thriving arts and entertainment districts. Find out what makes Orlando and the whole Central Florida area one of the top business relocation destinations and home to about 2.4 million. (See Photo #1 on page 12)

Attending the Orlando PWX will put you smack in the middle of the International Drive resort area. Certainly you will become familiar with the Orange County Convention Center. The convention center is the second largest facility of its kind in the United States, and it attracts more than 200 events annually with a total of 1.4 million attendees. The surrounding area known as International Drive, or locally as I-Drive, is home to numerous attractions, like the new Orlando Eye; fine and casual dining to the world's largest McDonalds; dinner shows, vibrant nightlife, and exciting recreation and entertainment complexes. (See Photo #2 on page 13)

Lake Eola Park, located in downtown Orlando, is the centerpiece of the city. From almost any location in the park, the spectacular downtown skyline is dominant and views of the signature fountain are dramatic. Use the 0.9 mile sidewalk circling the lake for exercise, rent and paddle the swan-shaped boats, feed the live swans, take the art tour or grab lunch at one of the many fine restaurants in and surrounding the park.

Sports and cultural venues are clustered around downtown Orlando. The Amway Center where the Orlando Magic hold home court, newly renovated Camping World Stadium, home of major NCAA championship games and host of the 2017 and 2018 NFL Pro Bowl, the Dr. Phillips Performing Arts Center and the Orlando Lions Soccer Stadium are all located within a few short blocks. At PWX time, there will be many opportunities to experience these amenities like the locals do. (See Photos #3 and #4 on page 13)

Getting around downtown and the Central Florida area is efficient with the addition of the Sun Rail, Central Florida’s commuter rail line allowing quiet, comfortable travel to many of Orlando’s neighboring cities. Connecting to the Sun Rail stations is a well-developed surface street bus network, a downtown circulator system as well as bike-share and zip car opportunities. It is genuinely fun, efficient and convenient to travel around the Orlando area. (See Photo #5 on page 13)

We here in the Central Florida area are truly proud to host the 2017 PWX and sincerely hope you will join us in enjoying this amazing place we are fortunate to call home. See you in August!

Rick Howard can be reached at (407) 246-3222 or richard.howard@cityoforlando.net.

Photo #1: Orlando Neighborhood

Photo #2: Orlando Neighborhood

Photo #3: Orlando Neighborhood

Photo #4: Orlando Neighborhood

Photo #5: Orlando Neighborhood
Photo #2: Orlando Eye

Photo #3: Amway Center

Photo #4: Camping World Stadium

Photo #5: Sun Rail Commuter rail line
Success for the City of Gulfport, Mississippi, as they become the state’s first accredited agency

Wayne E. Miller, P.E.
Director of Public Works
City of Gulfport, Mississippi
Alternate Delegate, APWA Mississippi Chapter

APWA has officially awarded the City of Gulfport Public Works and Engineering Departments accreditation status, making them the 118th such agency in the U.S. and Canada to receive this prestigious designation. The APWA accreditation program recognizes governmental agencies that go above and beyond the requirements of the management practices established nationally in the public works industry.

This has been quite a journey for the City of Gulfport Public Works Department which began this accreditation process in 2001. Kris Riemann, P.E., was the Director of Public Works from 1999-2009 and 2011-2013. Riemann said, “In 2002, I became enamored with the organization and its principles upon attending my first APWA Congress in Kansas City. I bought a book from the conference entitled Municipal Benchmarks by David Ammons which we used to create our public works system. We built this system based on performance criteria, rewards, benchmarks, and measurement of all our work. We combined all those items into a contract using privatization as an anchor and giving an annual report to the City for its success. It was from this time that we set a goal to achieve accreditation. From that moment, we have worked to improve the program, create standard procedures, and use the manuals/guides necessary to not only be granted accreditation, but also have the foresight to prepare the future of the program.” Riemann currently handles the duties of the Director of Engineering for Gulfport.

In 2005, Hurricane Katrina struck the Mississippi Gulf Coast. This shifted the focus of the City into recovery instead of accreditation. In 2007, the City submitted “Application for Voluntary Accreditation”; however, due to uncertainty of the U.S. economy, this process again was delayed. Then, in the summer of 2015, the City of Gulfport Public Works Director, Wayne E. Miller, P.E., decided to pursue this accreditation with a self-imposed deadline of fall 2016. In January 2016, a revised “Application for Voluntary Accreditation” was submitted to APWA.

The Public Works Department includes the following: Traffic Control and Safety, Vehicle Maintenance, and a privatization contractor, Utility Partners, LLC, which provides all labor and management services for water, sewer, streets, drainage, and inventory management.

Miller employed an “all in” approach to this accreditation. He sought employee involvement from laborers to upper management, giving them assignments and tasks to revise or develop any practices and policies which were applicable to their day-to-day jobs. Altogether, there were approximately 20 employees who played a critical role in creating and implementing the policies, procedures and standards needed to begin the accreditation process. Miller says, “This was a team effort with many employees involved. This was a process that our entire team, past and present, was behind and wanted to see accomplished.”

Brian A. Nelson, MBA, Project Manager for Utility Partners, LLC, agrees saying, “This is a testimony to the potential for success in public/private partnerships. Our team has bought into the City’s visions and goals and pursued them as they are our own because at the end of the day, they truly are.”
This accreditation process showed us that while we already followed many effective practices, we had a need to compile these practices in an organized and accessible form. This process has proved to be a worthwhile undertaking even if accreditation had not been awarded. It has given us a tool that we have not had before, in that we now have a Public Works and Engineering Handbook that covers all aspects of said departments. The picture below is the three 5” binders which include all of the practices that are the responsibility of our agency. This picture does not include any reference manuals but only the cover sheets.

During the evaluation process, the teamwork exhibited by all personnel made it difficult to determine who was a City of Gulfport employee and who was a Utility Partners, LLC employee. Everyone worked as a team and assisted as needed regardless of position or company, which became evident to evaluators. If a document was needed during the evaluation, an employee would find it, show to the evaluator and upload it on the APWA Self-Assessment site while the chapter was still being evaluated.

On October 19, 2016, this long-awaited goal became a reality when the Public Works and Engineering Departments were both recommended for 100% FULL ACCREDITATION. Utility Partners, LLC, was also recommended for accreditation due to the practices followed by the company and how they coincided with the agency’s practices. This recognition is a true testament to the quality services that our employees perform on a daily basis. Gulfport’s Public Works and Engineering Departments are highly dedicated to our mission of providing essential and vital services that affect the daily lives of everyone who lives in or visits our city.

Wayne Miller can be reached at (228) 868-5740 or wmill@gulfport-ms.gov.
CPFP: High-level achievements will be recognized

Mark Stinson, CPFP
Fleet Manager
City of Lee’s Summit, Missouri

As most fleet professionals know, this profession in the public sector is not always at the forefront of public view. We do not achieve the positive recognition by the public for highly visible road projects or increasing water supply or all the other services provided to the public, but fleet is the backbone of all city services from public works to public safety. Without fleet other departments would not be able to provide top-level service.

At times fleet professionals are looked at as costing taxpayers money, with fleet repairs and replacements always hitting tight budgets. However, when a high-level certification such as CPFP comes along that solely focuses on the public sector fleet manager, you should seriously consider working through the process of achieving the certification. Personally I can say that by going through the process, studying for the exam and now working through the process of recertification, I’ve gained the admiration of the City Administration and even the departments/customers that our department serves. They see that high-level achievements can and will be recognized through this process.

Back in 2007 when the CPFP certification exam was introduced I started looking at the course outline and realized that the structure of this exam was geared toward municipal fleet, not private and not corporate. It touched on all of the areas that a municipal fleet manager has to deal with on a daily basis. Plus, knowing that our city was already a big supporter of APWA, I was all in for working toward this goal of completing the requirements to obtain the CPFP. Once I purchased all of the suggested material I started organizing and reading the different areas of study. I thought at first this would be just a refresher since I had already been a fleet manager of eight years. Little did I know that there were a lot of areas for which I lacked knowledge. Once I realized this I started working hard to gain the knowledge needed to pass the exam. I also realized at that point that our fleet could be greatly improved with the new procedures and information I gained.

After reading a section that covered information technology and what you should be getting out of your fleet software program, I went from studying to pass the test to implementing the ideas I was learning by working on improving and changing our procedures with our fleet software program. We now are all paperless and fully track labor and charge-back rates to a very fine detail. We were also able to change the quality of information going into the system per vehicle, which led to very detailed reports that are shared with Administration and using departments. This is just one example of many that could be told about growing in the profession due to the process of working toward the CPFP certification.

In fact today I look forward to staying involved, learning and growing, and find it exhilarating to keep track of all that is accomplished in a year for recertification purposes. That is not to say that is why those tasks are completed; those tasks are accomplished because of a newfound purpose with my career.

While studying for this exam I read in the leadership section that a fleet manager should lead by example. We have all heard that from time to time. What I didn’t realize was that our fleet staff took notice of the efforts and the outcome of the CPFP exam and it led to those technicians pursuing their certifications in their respective fields. Now 100% of our staff is certified in one or more specialty areas.

If you are considering pursuing this certification, which I highly recommend you do, please don’t be intimidated by the talk of exams and reading material and information you may not know. Put that aside and dive in; just know there is help for you. From the list of material, to support from other CPFP managers, that support is just a call away. If you are determined and willing to persevere, you too can succeed in advancing your knowledge and career.

I guarantee that you will learn and grow and even find areas within your department that you can improve. Any time the fleet profession can be showcased and awarded for high-level achievements, we all should embrace it.

Mark Stinson can be reached at (816) 969-1061 or mark.stinson@cityofls.net.
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2017 NATIONAL PUBLIC WORKS WEEK
POSTER IS NOW AVAILABLE!
The 2017 National Public Works Week Poster Theme is
“Public Works Connects Us”. This year National Public
Works Week celebrates the vital role public works
plays in connecting us all together. As the cornerstone
of civilization, public works provides, maintains, and
improves the structures and services that assure a higher
quality of life for our communities. Its streets, roads,
bridges, and public transportation keep us linked together
from coast to coast, and its clean water and sanitation
services keep us healthy and allow our communities to grow
and prosper. APWA proudly salutes and thanks the tens
of thousands of public works professionals who work tirelessly
throughout North America every day to strengthen the bond
that keeps us all connected.

ABOUT THIS YEAR’S ARTIST:
Dan Cosgrove graduated from the University of Cincinnati with
a major in graphic design. After a brief stint with the National Park
Service in Denver and as a designer with Cato Johnson in Cincinnati,
he moved to Chicago to begin a freelance career. Dan specializes in
illustration and design. With a diverse portfolio that includes both
digital and print pieces, his artwork has appeared in numerous ads,
posters, packages, stamps, annual reports and more.
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Honoring cultural diversity through inclusion

Karen Mondora, P.E., Public Services Director, City of Farmington Hills, Michigan, and Chair, APWA Diversity; Jennifer Lawson, CSM, Water Quality Manager, City of Ann Arbor, Michigan

“When everyone is included, everyone wins.” - Jesse Jackson

The world is rich with diversity, which is reflected in the observances celebrated by its various cultures and populations. Knowledge of these holidays and celebrations can enhance your workplace diversity and inclusion efforts. When well executed, holiday celebrations can build positive morale, contribute to team building, and help lead to successful, cohesive organizations. Consider the following points:

Ensure a respectful and inclusive work environment
In today’s global culture, religious and cultural differences mean organizations may need to think more broadly about how they approach issues related to holidays and religious and cultural observances. Traditions are important in the workplace just as they are in our personal lives. Now, more than ever, there is a need to build understanding and awareness of others. By being mindful of these various traditions, we can learn how to celebrate diverse perspectives and create an inclusive and fair work environment.

Event planning considerations
It is important to make sure no one feels excluded or forced to participate in workplace festivities. Diversity should be celebrated along with the holidays so that everyone feels welcome. Ideas that you can implement in your workplace that can make special events more inclusive include:

• Put people of different backgrounds on the event planning committee.
• Celebrate unique holidays such as:
  o Pączki Day
  o St. Patrick’s Day
  o Canada Day
  o Chinese New Year
  o Cinco de Mayo

Religious needs to consider
Religion can be a deeply personal facet of one’s life. Be mindful and respectful of privacy and conscious of basic considerations such as fasting, gift-giving etiquette, etc.

• Tens of millions of Americans don’t celebrate Christmas religiously, either as followers of non-Christian religions (Buddhists, Muslims, Hindus, Jews) or as individuals with no religious affiliation.
• Many events, including spiritual, religious, and tradition-based, are celebrated in many different ways throughout the year.
• Be mindful when planning events, meetings and travel around various religious holidays.
• Avoid planning a luncheon or dinner function during Ramadan, Good Friday, Passover, and other dates requiring fasting or abstention.
• Provide vegetarian and vegan options at events that may have food. Keep in mind that while all specific dietary considerations cannot be met, it is important to recognize that people may be more vocal about their needs, and that efforts should be made to be inclusive.
• Research gift-giving etiquette to ascertain some facts about cross-cultural and religious differences. Be cognizant of what is acceptable as a gift, and that some individuals may politely decline a gift, based on their beliefs. In addition—NEVER expect reciprocity when giving a gift.

Handling requests for time off and other special needs
Title VII of the Civil Rights Act of 1964 says employers can’t discriminate based on religion, and must “reasonably accommodate employees’ sincerely held religious practices” unless it will cause the employer an “undue hardship.” Utilize
existing policies and resources where appropriate such as:

- Floating Holidays
- Flex time to allow for prayer for religious or personal beliefs
- Designate an HR professional as a “go-to” for guidance for special requests

**Expecting others to understand your beliefs**
Understanding religious beliefs other than one’s own is a key element of tolerance. You may celebrate a particular holiday, but that doesn’t mean that everyone else may celebrate it, or even understand the cultural importance that the holiday represents. Things that you may want to consider:

- Hang a multi-cultural calendar in a place where all employees can see it. Pay special attention to holidays that you are unfamiliar with, and do your research.
- Keeping religious items at work, on your desk or walls. As long as your office practices allow for display of personal items, think about showcasing your proud cultural and religious roots.
- Avoid political discussions at work! Keep the workplace environment professional.
- Give others the benefit of the doubt if they express a faux pas!

**Policies that create a workplace of inclusion**
Inclusion should be supported from the top of the organization on down.

- Interview HR staff for existing policies or best practices.
- Include appropriate policies in Employee Handbooks or bulletin boards.
- Include articles or spotlights on different cultural celebrations in employee newsletters.
- Highlight various religions during holidays to educate others. These may include Judaism, Hindu, Catholicism, Paganism, Atheism, and Jehovah Witness.
- Identify a venue for questions as issues or questions arise such as HR or legal consultation.

The above topics are merely suggestions. It is always prudent to engage your Human Resources departments to ensure that appropriate policies and best practices are being followed. It will be impossible to plan for every scenario and complexity, but a mindfulness to matters of diversity will help defray many potential hurdles. And remember: “When everyone is included, everyone wins!”

**Karen Mondora** can be reached at (248) 871-2534 or kmondora@fhgov.com; **Jennifer Lawson** can be reached at (734) 794-6430 or jlawson@a2gov.org.
Recognize Your Leaders

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

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

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

How long has the candidate been involved in the public works industry?  
Over 15 years

How long has the candidate worked in their current position?  
Approximately six months

Please describe the reason that the candidate is being considered for recognition.

Oni recently completed a major asset purge and long-term (15-year) fleet replacement plan for the City of Greenville. He worked with each department to review and optimize their respective fleets. Oni has a unique skillset of being a licensed professional engineer along with a strong financial background including an MBA degree.

How was the candidate’s leadership ideas/actions brought to the forefront?

We asked Oni to fill in while we were looking for a new Fleet Manager in January 2016. He immediately took on the challenge and met with the entire fleet team. They started by purging numerous vehicles and pieces of equipment that were being underutilized. He then met with every City department to see what vehicles and equipment they had in their budget and wanted to replace. That led to an operational and optimization review which determined that many more vehicles could be purged thus reducing the overall city fleet by nearly 30% and its value by millions of dollars. Oni then built the long-term replacement based on the APWA model.

Nominator’s Name:  
David L. Derrick, PWLF

Candidate’s Name:  
Matthew “Oni” Maxey, P.E., MBA

Candidate’s Title:  
Public Works Business Manager

Candidate’s Agency/Organization:  
City of Greenville Public Works

Candidate’s City/State:  
Greenville, South Carolina
Who did the candidate work with to help bring this idea/action forward?
Besides the Public Works Director and Assistant Director, Oni spent hundreds of hours working closely with representatives from each and every City department and especially the Office of Management and Budget.

Did the candidate experience any challenges when trying to implement this?
Initially there was a strong pushback from many departments who felt they could not function without all of their assigned vehicles or equipment. Oni was driven (no pun intended!) to prove to each department that they could complete their duties with fewer assets which in turn would allow the City to replace vehicles and equipment more frequently and within current and future budget forecasts.

Are there steps/processes that, when looking back, the candidate could have done differently to make this idea/action even more successful (lessons learned)?
Prior to Oni taking over Fleet, a study was conducted by a consulting firm which looked at the overall operation. Unfortunately this wasn’t completed and resulted in a multiple year lag in the implementation of the purge and subsequent replacement plan. Going through this exercise, Oni also found that our current fleet software is inadequate and will be replaced in 2017.

E-mail submissions to bstein@apwa.net.
One of the significant and high-profile ways that APWA members advocate for public works is through representing the organization to outside working groups, panels, and committees. At the national level, APWA has appointed representatives serving as the organization’s voice in many key responsibility areas including transportation, homeland security, infrastructure finance, and emergency communications and interoperability. Beyond the national level, there are countless state and local level groups to which APWA members are a part. All of this time and commitment is essential to promoting and advancing public works, and all of it is ADVOCACY.

Two examples of national-level groups to which appointed APWA members serve include the Executive Leadership Group for Transportation Incident Management (ELG TIM) and the National Homeland Security Consortium (NHSC). Each group is very specific in focus, and brings together various disciplines to address common challenges, share ideas, build connections, find solutions, and to promote those solutions.

The ELG TIM is supported by the Federal Highway Administration (FHWA), and in addition to APWA, is comprised of representatives from law enforcement, fire and rescue, emergency medical services, transportation, public safety communications, emergency management, towing and recovery, hazardous materials contractors, and traffic information media. The ELG TIM meets in person two times per year at U.S. Department of Transportation headquarters in Washington, D.C., as well as conducts two conference calls per year held in between the in-person meetings. By definition, TIM is a planned and coordinated program process to detect, respond to, and remove traffic incidents and restore traffic capacity as safely and quickly as possible. The ELG TIM’s purpose is to provide critical thinking and ideas on addressing policy and strategic issues related to the national TIM response system, and to push the involved disciplines to get as many people within their particular profession trained as possible to safely handle traffic incidents.

APWA first became a member of the ELG in early 2015. Currently, APWA Board Member Harry Weed is the APWA representative to the ELG and was
appointed by APWA President Ron Calkins. Previously, Ms. Chris Walsh from Beloit, Wis., served as the first APWA representative to the ELG TIM.

So, why is this important? Well, of course, the issue of safely and efficiently handling traffic incidents is a nationwide challenge. Too many responders are injured or killed when serving the traveling public during a traffic incident. Being part of the ELG TIM allows APWA the opportunity to provide critical input and perspective to its partners in this lifesaving role.

Further, it builds interdisciplinary relationships and connections that can be shared at the state and local levels to achieve a better result—in this case, fewer injuries and deaths. To date, more than 230,000 people across the country have been TIM trained. The ELG TIM provides a platform from which the public, policy makers, and practitioners can all be provided with accurate and timely information. APWA’s position with this group is advocating for public works by educating federal officials, policy makers, partner organizations, and the public, that public works professionals are on the front lines protecting the traveling public.

The National Homeland Security Consortium (NHSC) is another high-visibility working group which brings together various organizations for a central purpose. APWA is one of 22 public and private sector organizations with representatives from first and secondary emergency responder groups who meet in person twice a year to learn from one another and share their diverse expertise, geography, and experiences.

In early 2016, in preparation for the November election and a new administration, the NHSC released a priorities document highlighting areas of common concern. APWA signed onto the NHSC priorities document which recognized cybersecurity, critical infrastructure fragility, natural threats (climate adaptation, infectious disease), emerging issues, countering terrorism, and immigration reform as key challenges on the national security front. The NHSC further identified the need for sustainable and flexible grant funding, effective information sharing, and mutual aid to enhance capabilities and reduce costs as necessary tools to successfully address these significant challenges.

Presently, Mark Ray, Public Works Director for the City of Crystal, Minn., serves as the APWA member representative to the NHSC. His participation and expertise provide APWA the opportunity to inform its partners, policy makers, and the public about the role of public works in security-related matters. This type of interaction fits the very definition of advocacy. The above examples are only two of the many active working groups in which APWA members advocate, communicate, and network to advance the public works profession. Moreover, having APWA represented at the national, state and local levels in productive and visible roles is central to continuing to grow advocacy efforts. Sharing expertise and educating others about the fundamental roles public works professionals play within our communities can pay positive dividends in garnering support from the public and policy makers for the essential public works services needed for a safe, healthy and thriving society.

If you are involved in a similar working group in your community and are willing and able to share your experiences with the APWA Government Affairs team, please reach out to Andrea Eales at aeales@apwa.net or (202) 218-6730.
While in elementary school, the highlight of my week was waking up Saturday morning and going to work with my dad. If I was lucky, he would let me dig with the backhoe in a stockpile for a little bit before we went home. As a kid, I cannot count the times I heard my dad say, “I can’t believe we are doing this, but that’s what they (Owner, Engineer, etc.) want us to do.” My dad complained that engineers could make pretty pictures on paper, but did not understand how construction worked in real life. I told myself at a young age, “I’ll show him, when I grow up I’ll show him that there is a decent engineer out there.” Now many years later I still doubt I will ever convince him that a decent engineer really exists, but I never give up trying.

Fast-forward a few years and it’s Déjà vu. It seems that when a group of public works professionals get together, inevitably you will hear a story that starts with, “I can’t believe we are doing this, but…” Now many years later I still doubt I will ever convince him that a decent engineer really exists, but I never give up trying.

I work in the private sector as a public works professional. I work for a great company; if something doesn’t make sense, you don’t do it. As a matter of fact, if I repeatedly do something that does not make sense, I will be looking for a new job. I think everyone, publicly or privately employed, can relate to that concept. Why is it then, when we do things that do not make sense, it usually involves compliance with a regulation not in our control? I often ask myself, who’s regulating the regulators?

As public works professionals, we are trained problem solvers; I believe it is in our DNA. When officials ask us to cut our budgets and do more with less, we do. When the public has a concern with an intersection, we optimize it. When Mother Nature hits us with a disaster, we clean it up and restore basic services. When asked to design or manage a project for less, we cut costs and provide more services. We think in black and white; requirements/regulations are not for interpretation but for compliance. Somehow we comply without complaint, because non-compliance is not an option. Is this mentality hurting our industry?

Throughout my life I have sat through various meetings with elected officials. Our elected officials want nothing more than to get it right. As a matter of fact, some are terrified of getting it wrong. I once had a local official tell me, “We got it wrong last time. We will not be doing that again. If we do, we won’t be re-elected.” Needless to say, the outcome changed the second time. I have sat down in Washington, D.C. with members of both major political parties and have noticed something very important: When it comes to protecting life and property there are no political parties—we are all on the same team.

The vast majority of our elected officials are not public works professionals; they openly admit that they do not know the difference between TSS and MGD, and we should not expect them to. We must become the go-to source for help when it is time to create, delete, or modify regulations. We must arm our elected officials with facts. These facts should include our stories of success and failure. Elected officials love stories that start with, “I can’t believe we are doing this, but…”; they enjoy hearing where regulations do not make sense, have been wrongfully applied, cost the taxpayers more money, impeded job creation, or slowed progress. That is what they promised to change and what will get them re-elected. The question is, how do we become that source?
Should we all walk into our elected officials’ offices and start screaming about new regulation X, which is going to cost Y, which requires Z dollars we do not have? We could, but it probably will not work. The following tactics have worked for me:

- Sign up and become an APWA Advocate through the Legislative Action Center. APWA has an excellent staff in Washington, D.C. tracking regulations pertinent to public works professionals. When action is required you will receive an e-mail; if you follow the link in the e-mail, APWA will send a message to your elected official on your behalf. It takes less than 30 seconds. When I started using the Legislative Action Alert System, I thought, “No one reads this, I am wasting my time.” The System works, people are listening, and they do care about public works and our side of the story. In the past two years, I have received multiple responses from my Congressman and Senators, mailed to my home address, as a result of participation in APWA’s Legislative Action Alert System.

- Encourage your Representative to join the Public Works and Infrastructure Caucus. Last year, APWA Government Affairs staff worked to create a Public Works and Infrastructure Caucus in the U.S. House of Representatives. Through this caucus we can provide the facts and our stories to our elected officials in Washington, D.C.

You can use APWA’s Legislative Action Alert System to do so.
- Get to know your elected officials’ staff. Have you ever walked into an elected official’s office and said, “Hello”? Last year I did just that. I walked into a Nevada Congressman’s office and said, “Hello.” I did not have to fly to Washington, D.C. to do it; it was at his local office. I talked to his staff, found out what they were working on, told them what I do and what matters to me, and told them that I was available to answer questions regarding public works and I was willing to be a resource.

Infrastructure and infrastructure funding are becoming hot topics in federal, state and local governments. If you get a chance, watch John Oliver’s special on infrastructure, found on YouTube. I have watched it multiple times and I cry from laughter every time. It reminds me that what we do is important but rather boring to the general public. The public’s interest in infrastructure and infrastructure funding should be welcomed by public works professionals. This gives us additional ways we can become the known resource to our neighbors and elected officials.

In 2016, Clark County, Nev., had a ballot question to raise fuel taxes for infrastructure spending. Raising taxes is always a fun topic. I had the opportunity to explain to my neighbors, dentist, postman, etc. what public works professionals do and where the revenues were going. I reminded them, “You get what you pay for.” After a few minutes of conversation, the majority of the people I talked with agreed it was a good idea to raise taxes for infrastructure. The question passed, because every public works professional became a known resource for the industry.

The question “Who’s regulating the regulators?” should give every public works professional pause. If not us, then it is no one.

Steven Ireland is a native of Las Vegas, Nevada. A graduate of APWA’s Emerging Leaders Academy VII, he currently serves as a member of APWA’s Government Affairs Committee. He works for Las Vegas Paving Corporation, a heavy civil contractor, and focuses on alternative construction delivery methods. Steven can be reached at (702) 251-5800 or Steven.Ireland@LasVegasPaving.com.

Nominations for National APWA Committee Appointment

APWA is now soliciting nominations for appointments to national level committees/task forces/external relationships for the August 2017-2018 year. Step forward and offer your expertise to your profession. Beginning February 21, 2017, information on appointments may be obtained on the APWA website at www.apwa.net/membersonly/nominations. A brief biographical statement must be completed online or submitted as a hard copy in order to be considered. Nominations must be completed online or by mail between February 21, 2017 and close of business March 22, 2017. For more information contact Teresa Hon at thon@apwa.net or (816) 595-5224.
The idea of “Big Data” pops up just about everywhere these days, and most of us have experience—although we may not always be aware—with its impact. If I search online for information about some newly popular film or TV show, for days afterward I will see ads and be offered deals on whatever I searched for and anything commercially available that is in some remote way similar to what I searched for. All because the technical obstacles and costs of collecting data about my online searches and those of other people somewhat like me—“in my demographic” as the marketers say—have come down so much that someone thinks it is worthwhile to analyze our browsing and shopping records to predict what we might be enticed to purchase.

The accumulation of large collections of data about consumer behavior, medical records, bird-watchers’ reports, and more has given impetus to the techniques of “data mining.” The term refers to searching though the mounds of data to find potential valuable correlations and trends that might tell us about how to sell more tickets, stop the spread of the flu, or spot a real change in wildlife migration patterns. Some researchers have used data mining to learn how to do a better job predicting settlement of soils in highway embankments and improve water treatment plant efficiency.

Researchers working in the United States and the Persian Gulf area (as ancient geographers named it, although some people today would prefer to call it the Arabian Gulf) have been exploring how data mining techniques, new communication technologies, and relatively low-cost sensors can be combined to track viruses and other interesting components of municipal sewage flow. The concept is that a community might be able to spot and track closely the appearance of pathogens and other artifacts in the sewage in specific neighborhood areas and, when necessary, mobilize public-health resources to prevent the spread of infectious diseases. The researchers envision that the system might also be used to characterize the overall health of a city.

The underlying thought of using data to improve measurement and management of public services is not really so new, but our ability to do it quickly and over large areas is growing rapidly. For example, streamflow gauging to predict downstream flooding and crowdsourcing of road traffic speed to warn of congestion hotspots have been around for a while but remain fairly crude. On the other hand, while the “Super Bowl flush”—a sharp nationwide drop in municipal water pressures at the start of the halftime break—may be more urban legend than fact, at least one system manager found he could indeed infer that the timing of televised events influenced main pressures. Once someone discovers such a relationship, others may ultimately find ways to use it. Time and continuing advances in monitoring, communication, and computation technologies are likely to make big data a growing part of public works management.

Andrew C. Lemer, Ph.D., is currently a Senior Program Officer with the National Academy of Sciences, Engineering, and Medicine, Washington, D.C.; Chair, APWA Engineering & Technology Committee.
OPEN YOUR WINTER TOOLBOX

The Plow

Wilfrid Nixon, Ph.D., P.E., PWLF
Vice President, Science and the Environment
Salt Institute, Naples, Florida
Member, APWA Winter Maintenance Subcommittee

Possibly the most obvious tool in our winter maintenance toolbox is the snowplow itself. It is absolutely critical in achieving the most common level of service goal (bare pavements) and it has an important role when you are leaving snow on the road, but grooming it for safer travel (as you might do with a gravel road, for example).

The primary way of removing snow from the pavement surface is with a plow, not with chemicals. Chemicals serve to prevent the snow from bonding to the pavement surface so that we can more easily remove it with the plow. The plow is thus our key tool. In talking about plows, I will not be talking about snow blowers or rotary plows (see Figure 1). These are great tools but really rather specialized.

It turns out that, in some sort of strange Zen way (you’ve heard about the Zen deli? The only sandwich you can buy there is one with everything...), the plow is both very simple, and rather complex. It is simple because it is just about moving stuff from one location (on the pavement surface) to another (not on the pavement surface). How it does that simple task can be rather complicated.

There are basically four different types of plow: front mounted, wing mounted, underbody plows, and tow plows. Each has a function it can perform very well for an agency, and whether an agency has that sort of plow will depend on what tasks the agency must perform. Let’s state the obvious just to get it out of the way. If you have a multi-lane road to plow, a tow plow can be an enormously useful tool, allowing you to clear the road with fewer trucks. However, a tow plow is not going to be of much use if you are plowing alleys. That does not make it a bad tool. It simply means it has certain tasks it performs very well, and others to which it is not suited.

The simple four plow types do not tell the full story either, since each of these types comes in a variety of sub-types too. Front-mounted plows can be reversible, or one way (i.e., only casting snow to one side of the truck) or vee-plows. They can use a float system, which controls hydraulically how much of the weight of the plow rests on the ground, from none at all (fully floating) to the full weight of the plow (and some systems even allow down pressure on the front plow, thus giving more than its full weight). The fully floating systems can be very useful in situations where the pavement surface contains components that would be damaged by the full weight of the plow (for example, in-pavement reflectors, or some types of special pavers). But clearly, if you do not have such features to deal with, a fully floating plow may not be your best option.

Wing plows can of course be mounted on both sides of the truck. They can also be mounted at the front (see Figure 2 on p. 30), the rear or in between on the side of the truck. You might think that a wing plow can be a bit unwieldy in a city situation, but many cities make good use of them. One reason is their versatility—if you are dealing with a narrow thoroughfare, you just raise the wing. When the street widens out again, you can lower it. It acts as a very effective force multiplier, allowing a single truck to do more work than it would otherwise do.

That said, if you plan on adding wing plows to your fleet, you must also plan on training your operators so that they can make the best possible use of the wing plow. You will also have to carefully evaluate your plow routes to make sure that wing plows are suitable for the routes they will be used on. This means paying particular attention to potential obstacles like fire hydrants. Bad things happen when wing plows get up close and personal with fire hydrants!

continued on page 30
Underbody plows are, as the name suggests, mounted underneath the truck frame. Depending on the particular model they may be adjustable to plow snow to the right or to the left, but the major factor with underbody plows is whether or not you can apply a positive down pressure on them. If you have an underbody with down pressure capability it can be extremely effective at cutting ice (see Figure 3), which is useful if you have to handle ice storms. The drawback of all that down pressure (and there is typically a lot of it available) is that it is very easy to misuse it, and wear through a cutting edge (and even a mold board) in only a few miles of plowing. You may also need to be careful about what surfaces you use underbody plows on if they have down pressure—some overlays can be severely damaged by an overenthusiastic application of down pressure in an underbody plow.

Underbody plows are useful not just for cutting ice. In Michigan, for example, they are used extensively for snowplowing, without a front plow being mounted.

Obviously, there are limits to the snow depth you can handle in this way, but experience in Michigan suggests that for most cases they have to deal with, the underbody plow works just fine.

Tow plows are a relatively recent innovation but have proven to be extremely useful for those agencies that must handle multilane roads. As the name suggests, the tow is plowed behind the truck, and when deployed the towed plow swings out (normally to the right of the truck and behind it) thus providing rather more than two lanes of plowing width. Again, this sort of equipment can be a wonderful force multiplier, in the correct circumstances.

Critical to the performance of plows is the selection of a proper cutting edge for the plow. Cutting edges are much more sophisticated today than they were even ten years ago. And that raises both challenges and opportunities. The new edges (and indeed, the new plow types) remind us that there are now solutions available to us that were not available to us a couple of decades ago. Put another way, if your agency has been using the same types of plows, and the same cutting edges for the past twenty years, it is long past due for you to look at some of the great new stuff that is out there. And it is great!

Of course, it is easy for me to say “go take a look at all the new stuff” but how could you actually do that? Well, without making too shameful a plug, the APWA North American Snow Conference is coming up in April (specifically April 23-26) and included in the conference is an exhibition where all the stuff I have talked about in this article, and a whole lot more, will be available for you to look at. So, come to Iowa in April and “kick some tires.” And see what else is new in the world of winter maintenance! See you there!

Wilfrid Nixon can be reached at (239) 231-3305 or wilf@saltinstitute.org.
As Australia and New Zealand continue to be notably ahead of the United States in sustainable infrastructure funding, Pratt will gather information how they have achieved this through national policies, legislation, and standards. His fellowship will result in a strong story to share with APWA members and legislators about legislative mechanisms, administrative structure, and government’s role in technical support to link funding with asset management. A second tangible result will be specific agency examples focusing on two technical areas: case studies on maintenance optimization and specifics about asset management methods for underground utilities, which differ from methods for roads.

The APWA 2017 Jennings Randolph International Fellows include:

| Evan N. Pratt | Evan N. Pratt, P.E., Water Resources Commissioner/Director of Public Works, Washtenaw County, Ann Arbor, Michigan has been selected to travel through Australia. Pratt will focus on trading asset management knowledge during his travels and at the 2017 Institute of Public Works Engineering Australasia (IPWEA) conference to be held in Perth. |
| Tracy L. Warner, P.E. | Tracy L. Warner, P.E., Municipal Engineer, City of Ames, Iowa, Jennings Randolph International Fellowship Task Force Chair |

As Australia and New Zealand continue to be notably ahead of the United States in sustainable infrastructure funding, Pratt will gather information how they have achieved this through national policies, legislation, and standards. His fellowship will result in a strong story to share with APWA members and legislators about legislative mechanisms, administrative structure, and government’s role in technical support to link funding with asset management. A second tangible result will be specific agency examples focusing on two technical areas: case studies on maintenance optimization and specifics about asset management methods for underground utilities, which differ from methods for roads.
Joanne Zhang, P.E., CCM, Council Liaison, Executive Division, Bureau of Engineering, City of Los Angeles, California has been selected to travel through Australia. Australian public works professionals have demonstrated interest in innovation and the country has promoted public sector initiatives to align with the values of American Millennials. Zhang plans to study the ways that Australia is fostering a culture of innovation in public works and its effect on attracting and retaining talent and on capital project delivery. Through Zhang’s travel experience and research, insight will be shared on how Australia has implemented successful initiatives to foster a culture of innovation with limited resources and to learn an effective innovation strategy for APWA. Zhang will meet with officials from the Institute of Public Works Engineering Australasia (IPWEA) to determine engineering resources, policies, standards, and contacts. Zhang also plans to interview local staff with a range of experience and attend a Switch Your Thinking event. Switch Your Thinking is a local government initiative to promote sustainable action in Perth. Zhang also plans to tour project sites, including different modes of transportation and public spaces while in Australia.

Aaron Putnam, Public Works Administrator, City of Ankeny, Iowa has been selected to travel through Sweden. Putnam will conduct a study tour to compare winter maintenance practices between Ankeny and three cities in southern Sweden. The study will look at the entire winter maintenance realm from city planning to material and equipment usage, goals and priorities, staff scheduling, and public relations. Three communities in Sweden have been identified: Orebro, Gothenburg, and Stockholm where Putnam will spend time exchanging information to improve relations, share perspectives, and advance winter service currently provided in our cities. The value of meeting public works peers in Sweden in their work environment includes discussing successes and challenges, seeing their tools and equipment, and being immersed in their environment.

Zhang will present the Millennial’s Perspective while attending the IPWEA conference in August 2017. The study results will be used in the areas of recruitment, succession planning, gender equity, and project delivery. Putnam will make a presentation while attending the SKT Annual Congress in Gothenburg, Sweden in September 2017. The presentation will include information about the City of Ankeny’s weather, equipment, pre-season preparation,
pre-snow event activities, snow event operations, and post snow event wrap-up.

For more information about the APWA Jennings Randolph International Fellowship Program, contact International and Outreach Manager Lillie Plowman at lplowman@apwa.net or (816) 595-5253.

Tracy Warner can be reached at (515) 239-5160 or twarner@city.ames.ia.us.

“Public Works is a powerful instrument for understanding and peace.” – Jennings Randolph (West Virginia Senator, 1932-1985), known as the “Dean of Public Works Legislators” Honoring the legacy of Dwight D.

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Roanoke’s Sealed Compactor Program: Serving the market

Nell Boyle, LEED AP BD+C
Sustainability & Outreach Coordinator
City of Roanoke, Virginia

Twenty-five years ago downtown Roanoke was cluttered with empty buildings, very few residents and very little commerce, conditions that were unattractive to new business. However, in 2017 downtown is thriving with over 1,200 residents, numerous restaurants many with outdoor dining, shops, museums, a bustling amphitheater and public park, all right along the greenway. Today, in the Central Business District (CBD) at any time, day or night, the sidewalks are free of solid waste containers, boxes and debris. Roanoke has a great revitalization story to tell and the City of Roanoke and Downtown Roanoke Incorporated (DRI) contributed to the success. They formed a partnership to help Roanoke improve its streetscape to attract new businesses, encourage outdoor dining, and improve the visitor’s experience.

Roanoke started to grow in the early 1990s and by 2000 the CBD was adding retailers and restaurants at a good pace. The challenge was that the storefronts were cluttered with unsightly trash on the sidewalks waiting for collection. The changing needs of the growing community had to be addressed, so DRI contacted the City of Roanoke’s Solid Waste Management team to work together to find a solution for the vendors.

It was during this time when DRI brought the idea of a sealed compactor program to the City as a potential solution to the problem. DRI is a nonprofit organization that advocates for the local merchants in the CBD. They recognized it was in everyone’s best interest to find a solution that was flexible enough to provide service 24 hours a day, seven days a week. DRI developed an Exploratory Compactor Committee comprised of local merchants, Roanoke’s Solid Waste Managers, and the City’s Police.
The sealed compactor units are behind an attractive privacy screen that blends right into its surroundings.

The new sealed compactor program. The planning started immediately for a program that would service the core of the business district. The core would be designated into five zones that would provide recycling and waste services to the merchants and residents. Within each zone, target areas were located to best position the units and then negotiations began with property owners to secure the lots. The first unit, the Market Area Compactor, was launched in September of 2013. The unit is available 24/7, and it is monitored and well lit for safety. There is an attractive privacy screen that keeps the unit out of sight. It is accessible with a fob allowing keyless entry to the unit that also tracks who is using the site and how often it is accessed.

Initially, there were concerns from the merchants; DRI was on the front line with excellent resources on their website and taking the time to instruct new users on the program. The City staff also trained merchants and provided excellent customer service to the users. The additional four units were completed and each time the community was more receptive after seeing the success of the early units.

The positive benefits for the community are certainly the clean streets but also the 24/7 safe access and overlapping zones for additional convenience. Each registered user is given a fob for access to the compactor. An additional benefit of using the fobs is if a property manager is currently using fobs for building access the fob can be programmed to work for the compactor as well. Users are given two free visits per week and additional visits are $1.00 each. Fees are capped for vendors and property owners with a policy of “not to exceed” the previous fees. Typically the vendors’ fees have been reduced by 50 percent or more.

For the City, labor costs have been greatly reduced because the units generally only need to be serviced once a week, reducing countless hours of collection time that were required in the previous schedule. Recycling has skyrocketed with a volume increase of 565%, which reduces tipping fees with a reduction in trash volume of 56%.

**Before compactor – tons per year**

- Trash: 1,038 tons
- Recycling: 60 tons

**After compactor – tons per year**

- Trash: 576 tons
- Recycling: 338 tons

The critical change is the benefit to the local economy. Shortly after the first two compactors were operating, a new business prospect was visiting the community for the potential award of a minor league hockey team. During an interview with the Roanoke Times the owner commented on how clean downtown looked and that influenced his decision to select Roanoke as the home for the new Roanoke Rail Yard Dawgs hockey team!

Despite the initial reluctance of some participants to use the compactors, the overwhelming response from the business community has been outstanding. Through the program the trash containers are off the sidewalks, residential units are more effectively serviced, and the significant increase in recycling builds awareness and reduces tipping fees. Savings are a great motivator for change; one success story is Cornerstone Bar and Grill. Previously, they paid $120 per month for curbside collection. With the sealed compactor program the monthly average fee was $70, saving $600 per year with the new service.

Here are a few of the comments from local merchants.

**“We love having it readily accessible and the recycling option is perfect for us.”** – John, Roanoke Natural Foods Co-Op

**“I think it is wonderful and beneficial to all. It beautifies the streets, encourages recycling, and provides a positive opportunity for us to come together for a better Downtown Roanoke.”**

– Maya, On the Rise Bread Co.

The best measure of success is when others sing your praises. Glenn Gilmer, District Manager of the Richmond Loft Company, a prolific developer and manager of residential, commercial and mixed use properties in the CBD, loves the program. “The program works so well for our residents and merchants of the Parkway 301 mixed use property. Originally, the bins were overflowing with debris and recycling...”
and I was toting it out to the sidewalk each night. Now the residents take their own trash and recycling to the compactor at their convenience, and it is half the cost of the previous service. Everyone likes this better!”

When commerce is thriving, life is good in the city. The downtown is a hub for doing business and gathering together for a rich and vibrant lifestyle that people want to call home. The partnership of DRI and the City of Roanoke working together to clean up our streets, invites people to come back to downtown. More people means more business and the sealed compactor program has made a great contribution to Roanoke's positive economic growth.

Nell Boyle can be reached at (540) 853-5430 or nell.boyle@roanokeva.gov.
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Changing Faces: New partners for a complex discard stream

Kate Bailey
Director, Eco-Cycle Solutions
Eco-Cycle, Inc.
Boulder, Colorado

Public works professionals are on the front lines of the global transition to a circular economy. In the past 20-30 years, your roles have shifted away from just running trash trucks to managing a variety of services, such as recycling, organics collections and reuse drop-off centers, all designed to maximize the value of our discards. Job titles and departments are being rebranded to reflect this important shift, moving away from Solid Waste Managers working in Solid Waste Departments to Waste Diversion Managers working in areas like Austin’s Resource Recovery Department.

But managing resources goes far beyond just changing a department name or job title—it’s about greatly diversifying and expanding services and infrastructure. Fortunately, those challenges are not just on your shoulders.

Increasingly, cities and counties are partnering with private businesses, nonprofits and social enterprises to expand services and infrastructure without expanding municipal staff or budgets. These partnerships range in size from large national players like Habitat for Humanity’s ReStores that manage thousands of tons per day to small startups servicing a few hundred customers.

These partnerships between municipalities, nonprofits, and social enterprises can help you better serve the community. By handling difficult discard streams like mattresses and electronics,
nonprofits and social enterprises increase diversion rates, which in turn prolong the life of landfills and reduce pollution. These partners create local jobs, often for hard-to-employ populations, and bolster local economies by reselling and repairing materials, keeping their value recirculating longer in the economy.

Let’s meet eight model community partners whose efforts are helping to manage an increasingly complex waste stream while providing environmental, economic, and social benefits to your local community.

**Momentum Recycling** is a glass recycling company based in Salt Lake City, Utah, that is stepping up to fill local gaps in glass recycling infrastructure and services in three ways. First, the company provides curbside glass collection. Second, they clean post-consumer glass so that it can be sold to glass manufacturing facilities. Third, they recycle new material types such as window and plate glass. These types of private industry players augment municipal collection services, increase diversion rates, expand local markets for challenging materials, and boost the local economy by creating jobs and value from waste. (See Photo #1 on page 38)

**Vermont Foodbank** started its Fresh Rescue Program in 2014 to collect and redistribute fresh food donations from supermarkets, festivals, other generators. The foodbank is one of a growing number of nonprofits working to reduce hunger and food insecurity while also educating residents and businesses about reducing food waste. The Vermont Foodbank saw a 40 percent increase in donations in 2016, in large part due to Vermont’s Universal Recycling Law, which bans all recyclables and food waste from the landfill by 2020. The foodbank’s work decreases waste generation, reduces greenhouse gas emissions from food waste, extends landfill life, and provides valuable community education. (See Photo #2 on page 38)

**BlueStar Recyclers** is a Colorado-based, nonprofit social enterprise that helps to solve two problems: how to provide meaningful jobs for an underemployed population and what to do with electronics waste, one of the fastest-growing segments of waste...
stream. BlueStar employs people with autism and other disAbilities to dismantle electronics, and then markets them responsibly as an e-Stewards certified company. By serving this under-employed population, BlueStar is replacing the need for social services to these populations, a value estimated at $18 per hour worked. BlueStar’s work helps increase diversion rates, reduce pollution, expand services and provide social value back to the community. (See Photo #3 on page 39)

**Habitat for Humanity’s ReStores** are nonprofit home improvement stores and donation centers found in communities nationwide. These centers are keeping 125,000 tons of used building materials, furniture, and home accessories out of landfills every year. With more than 850 locations, ReStores are boosting local diversion rates, reducing the need for bulky item pickups, creating local infrastructure for construction and household materials, and helping disadvantaged populations both through employment and by providing quality materials at reduced prices. (See Photo #4 on page 39)

**Casper Curbside Recycling (CCR)** is a small startup company based in Casper, Wyoming, that provides curbside recycling to residents to complement the city-run trash collection. Started by a local couple who saw a service gap and business opportunity, CCR has found a receptive audience and now boasts 200+ residential customers and 40+ businesses. They represent small-scale entrepreneurs who are creating local jobs that bolster the local economy, increase diversion rates and augment existing city services.

**Veteran Compost** runs composting facilities and collection routes in the Washington, D.C., metro area. With a passion for turning food scraps into high-quality, marketable compost, the veteran-owned business is also dedicated to providing quality employment opportunities for U.S. veterans. The company is building the needed infrastructure to manage a large portion of the waste stream, educating residents about the valuable nutrients in their waste, and boosting diversion rates.
Eco-Cycle’s Center for Hard-to-Recycle Materials (CHaRM) is a one-stop shop in Boulder, Colorado for recycling the “hard-to-recycle” materials that make up 10-15% of our discards. CHaRM collects more than two dozen different categories of materials—such as electronics, mattresses, block foam packaging, books, textiles, yoga mats, porcelain sinks, fire extinguishers, and small plastic appliances—for remanufacturing, reuse, and recycling by both local and national partners. Co-founded by Eco-Cycle and the City of Boulder in 2001, the CHaRM served 36,000 customers last year and collected three million pounds of materials. As a valuable piece of Zero Waste infrastructure, the CHaRM helps increase diversion, reduce pollution, and create new opportunities for recycling and reuse by serving as a collection point and incubator for startup companies, entrepreneurs or organizations that create value by using recycled materials.

Collaborating for Success
Each of these partners is expanding local resource recovery services and infrastructure. Their success helps meet community goals to increase diversion, extend landfill life, reduce pollution, and create local jobs that bolster the local economy. As public works professionals, you can help them succeed by collaborating on projects, being a supporting partner on a funding proposal, promoting their services in mailings and utility bills, or simply meeting regularly to talk about mutual challenges and opportunities. These are the new faces of the solid waste industry. Let’s welcome them to the family with gratitude for all they provide our communities.

Kate Bailey works for Eco-Cycle as the project director of Eco-Cycle Solutions and helps citizens, government staff, and elected officials to implement Zero Waste solutions nationwide. She can be reached at (303) 444-6634 or Kate@ecocycle.org.
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Solid waste professionals and our quest for waste reduction and diversion

Michael Foote, MPA
Principal
Foote Consulting, Gillette, Wyoming
Member, APWA Solid Waste Management Committee

In 2014, those of us living in the United States generated about 258 million tons of MSW (municipal solid waste) with over 89 million tons of MSW recycled and composted. This represents a recycling rate of roughly 35 percent. How does your community compare? This is a critically important question, but one that is far from easy to answer. There are over 40 major cities with zero waste goals and hundreds of cities across the U.S. with either zero waste or recycling goals, mandatory recycling programs, and a variety of landfill bans in place. The challenge, however, is that many individual states and cities have different laws, regulations, and methodologies to identify what items qualify as “recyclable” in their collection systems and what specific activities are included in their “diversion” metrics. An April 2015 article in The Economist suggested there were about 9,800 different municipal programs in the U.S. operating under different rules. Needless to say, this can create confusion in the minds of our citizens, and perhaps more importantly, our elected officials.

In our quest to reduce the amount of materials entering our landfills and quantify the successes or acknowledge the setbacks encountered by our programs, we are hindered by the lack of a consistent nationally accepted metric to report our results. This can be compounded when elected leaders have directed staff to achieve certain diversion goals or to attain zero waste status in a specific and often truncated time frame. It is critical for public works professionals to have an understanding of how we are performing relative to our colleagues in other communities. This common metric is key to fostering objective intercommunity competition and comparison across municipal boundaries. We also have a responsibility to reassure citizens that their tax dollars are being spent prudently and their recycling efforts are contributing to worthy collective outcomes.

If nothing else, many of us who are active in solid waste management can sense the emergence of a transition from a “linear economy” to a “circular economy” where our “waste” becomes raw materials for local economies to leverage into job creation and expansion of the tax base. The City of Phoenix is an example of a community pioneering the implementation of circular economy concepts though their Reimagine Phoenix initiative. Public/private partnerships (P3s) have been created to transform specific components of their waste stream into feedstock for end products. It would seem that we are only limited by our imagination and creativity to begin making the transition to a circular economy. The key, however, is to have some form of a “universal” metric in place. One suggestion I would offer is to create a new tool, possibly the Resource Management Index (RMI) in order to address and recognize the various activities contributing to a comprehensive and holistic waste diversion program.

The creation of this new metric, the RMI, would allow us to track and compare the results of our programs with other communities in a potentially more equitable manner. From a sustainability perspective, it is helpful to acknowledge the tracking of the quintessential rudimentary initial step of avoidance (or prevention) of waste generation in the first place then include water and energy savings, greenhouse gas emissions, reusing, repairing and repurposing.

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activities, as well as supplanting virgin materials, which are all equally important in the overall process of resource management. Each of these items, combined with traditional metrics, like quantifying composting and commodity recycling, could be key components of developing the RMI.

The intent of this article is to initiate a process by first asking a few key questions, then prompting a discussion among the APWA community in order to advocate for a common understanding of what the term “diversion” means and how we can move forward with a standard metric in order to appropriately compare programs and report outcomes to our citizens and elected officials. Let’s start first with our most commonly used metric, the recycling rate. The EPA provides a starting point by offering a method to calculate a recycling rate, which requires dividing the total amount of MSW recycled in a given year by the total amount of MSW generated (amount of recycled materials collected divided by recycled materials + MSW). However, this method is much different from calculating a true diversion rate with the recognition and incorporation of all of the holistic activities.

Some of the questions we need to resolve are essential for the commencement of our discussion regarding the evolution of data management. How do we replace weight-based measures at a time when the economy stream (formally known as the waste stream) is experiencing continual reductions in container weights, hard-to-recycle product packaging, and a shifting overall composition? Are there ways to transition towards a more holistic indicator representing a collaborative effort in arriving at an appropriate metric with consensus support? Could public works professionals work collaboratively to better utilize this new metric?

Kate Bailey’s article, “Changing Faces: New partners for a complex discard stream,” in this month’s Reporter offers a variety of creative solutions and strategies to address waste reduction and diversion challenges faced by a diverse set of communities. These unique partnerships are great examples of the need to move towards a consistent metric to adequately measure and report the great efforts utilized by communities and organizations throughout the country. It may be time for us to revisit the circular recycling arrows to incorporate more of the concepts of the circular economy along with the traditional three R’s (reduce, reuse, recycle).

Now that some of the proposed questions for discussion have been identified we need to create a forum for the orderly implementation of a discussion. Perhaps the Solid Waste Management Committee’s infoNOW section on APWA’s website could be a suitable forum for our discussion. The discussion we can have will need to include how we are going to move beyond recycling rates toward a universal metric like the RMI. In addition, we will need to have an implementation plan to determine how to make the transition. The discussion and planning process will need to include pertinent stakeholders so that all voices, opinions, and suggestions are heard. My sense is that this may not be an easy process; however, we need a viable tool to be able to make appropriate comparisons between our programs. This will help us properly inform our citizens and elected officials. The creation and utilization of a new metric is a critically important tool for public works staff and one we need to create very soon.

If you have comments, questions or suggestions please join us for an online discussion.

Michael Foote, MPA, has been active in the recycling/resource management industry for over 30 years having worked in the private, nonprofit and public sectors. He currently serves on the Solid Waste Management Committee plus a variety of state organizations and committees. In addition, he recently served as Sustainability Manager for a municipal government. He can be reached at cmichaelfoote@me.com.

References


Moving beyond technical skills in hiring

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

Public sector managers are constantly challenged to meet the increasing expectations of their “customers.” Citizens are accustomed to enhanced service delivery from the private sector and call for the public sector to follow suit. They also expect a pleasant customer experience.

For solid waste, the customer experience typically begins at the curb. This is where solid waste operators have the opportunity to interact weekly with each household and the experience can leave a lasting impression, perhaps even being publicized throughout social media. Good or bad, each encounter reflects directly onto the entire organization.

With such high stakes, it becomes essential for agencies to develop employees that embody their culture and this begins with the selection process. While technical skills such as ability to safely operate equipment will always be important, soft skills are crucial. “Our employees have to problem-solve on the spot and be able to handle tense situations,” says Mike Mundell, Solid Waste Manager for the City of Braunfels, Texas, where their interview process strives to bring out candidate characteristics that demonstrate the capacity to do this effectively. “We are seen all the time and need to look professional all the time. We are the face of the City.”

Donald Long, Director of the City of Durham’s Solid Waste Management Department, echoes this sentiment. “We have a strong culture to maintain and soft skills mean a lot to us. We want to make sure there is a definite fit.”

So how do you single out candidates that are an overall fit for the job and your agency’s values? Unfortunately, there isn’t a secret formula, but most solid waste departments utilize probing questions in the interview process.

“We utilize questions that reflect on the candidate’s people skills,” says Scott Windsor, City of Spokane Solid Waste Collection Director. “Questions with no right or wrong answer help to identify the individual’s mentality towards people and service.”

The Internet is a great resource to find sample behavioral interview questions and select those which help bring out candidate skills that most promote your culture:

- “What work environment do you perform best in?”, “When was the last time you asked for help?” and “What type of people do you work best with?” aid in determining the candidate’s fit with the specific job and their coworkers.
- “What are the steps you have used to successfully handle an irate citizen?”, “Tell me about a time you gave superior customer

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“service” and “A citizen states that you ran over her mailbox. How will you handle the citizen?” demonstrate the candidate’s customer service skills.

- “What are some examples of you going beyond your job requirements?”, “What did you do in your last job to contribute to a positive work environment?” and “What kind of professional development and training have you attended over the last three years?” bring out how engaged the candidate may be.

Also, focusing on how upbeat, committed, and caring the candidate is during the interview can help to reveal their character. Look for detailed examples where the candidate has demonstrated a strong desire for a happy customer. Some people are skilled at showing only what they think you want to see; however, by listening, allowing the candidate to fill in the details, and asking follow-up questions, most people’s personalities will come through.

Hiring service-oriented employees is just one step in creating positive customer experiences, but it may well be the most important. As Herb Kelleher, former Southwest Airlines CEO used to say, “We can change skill levels through training, but we can’t change attitude.” When you hire employees who care about solving problems, engaging with citizens, and making the community better, citizens connect with and value their solid waste service.

Monica Bramble can be reached at (941) 240-8060 or mbramble@cityofnorthport.com.

Facebook posts
Customer-focused process improvements: solid waste employees leading the way

Steve Wamback, MPA, PWLF
Sustainable Resources Administrator
Pierce County Public Works, Tacoma, Washington
Member, APWA Solid Waste Management Committee

If I told you that you could improve the customer service delivered by your organization in a way that resulted in higher employee satisfaction, would you be interested? Probably. But you’d likely challenge me about how much time I’d need to pull you and your staff away from “regular” work, how much follow-up would be needed, and how much it would cost. When I told you that a small up-front investment by your department leaders could allow you to improve customer service and employee satisfaction in the context of your everyday work, I imagine you might be surprised, or perhaps skeptical. Either way, here’s how one organization accomplished just that.

Pierce County Public Works, and its 660 employees, provides transportation, surface water, sewer, airport, ferry, solid waste and code enforcement services to a county with approximately 850,000 residents an hour south of Seattle. In 2014, Department leadership launched a strategic planning effort to Engage Our Customers in Decision-Making. The intent was to increase opportunities to hear what customers want and need, integrate those needs into decision-making, and build credibility with customers to earn their continued trust and support for Department services.

A first initiative (2014-2015) focused on how Department leaders and project managers could bring customers into project planning rather than delivering (nearly) finished plans for review in a formal hearing environment. Efforts starting in 2015, and carrying throughout 2016, expanded beyond project planning interactions and centered on an initiative to “define, teach and reinforce core customer service principles to ensure consistent positive customer interactions.”

This shift was important because it removed the initiative from the planner/programmer rafters by recognizing that everyone in Public Works has the opportunity to engage in a customer service relationship that can make or break customer trust. Sometimes that relationship is internal (when one part of the Department acts as service provider to another) but is most often external involving the folks who use the infrastructure provided or maintained by the Department. Three members of the Department leadership team, including the Director, formed a work team which retained the services of a communications and training consultant. The immediate goal was to design an employee-centered customer service training program that could involve ALL staff and would be effectively delivered and led by section/program supervisors rather than by outside trainers and consultants. This was very important because success was dependent on supervisors being able to integrate customer service planning into existing work without having to spend a lot of money.

The result was the creation of a tools-based approach to customer service. Every manager and supervisor in the Department (approximately 120) is being trained—in a four-hour class—on how to work with their teams to prepare a customer service business plan.

From Training to Practice in the Sustainable Resources Division

The next part of this article reports how Pierce County’s Waste Reduction & Recycling team implemented the customer service business planning tool. Five employees manage the regional waste reduction, recycling and disposal system operated by private sector partners. County staff are in charge of system planning, facility contract management, setting minimum acceptable levels of

In addition to training on the customer service business planning tool, Department leadership, advised by an inter-divisional and cross-functional work team, adopted a Department-wide Customer Service Policy and Customer Service Promise.

Customer Service Promise – I LEARN
I Listen actively
E Explore options collaboratively
A Act quickly and effectively
R Review for customer satisfaction
N Navigate other approaches

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service, publication of a twice-yearly newsletter, and ongoing maintenance of websites and collateral printed materials.

**Improvement Opportunities.** The first order of business for the team was to identify an improvement opportunity. The core instruction was that the opportunity had to be something significant or important and that improving this aspect of the customer service relationship would impact core achievements, accomplishments and goals for the team. In this team’s specific situation, the most important “goal” was a new vision statement published in the recently updated regional solid waste management plan.

Since helping customers become effective partners in “managing” the system was seen as paramount for achieving substantial, long-term success, the team’s improvement opportunity was phrased this way:

> Achieving success in the customer service business plan, however, required the team to step aside from the totality of the customer service experience to focus on just that one aspect targeted in the improvement opportunity: customer understanding of system costs and benefits.

Conversation around the table identified common misperceptions (e.g., customers think the County is pocketing money from the sale of recyclables) to the not-so-common (e.g., customers don’t value our system because subscription is optional). Some of this conversation was inspired by comments customers entered in a survey and others from conversations with customers at a recent community event. The team found that the misperceptions not only got in the way of the customer gaining understanding, but more crucially added an element of frustration and testiness to how staff were communicating with those customers.

**Future State.** Identifying the desired future state was the third step in the process. The team was asked to provide a detailed, discrete and measurable description of how things would be different if customers understood costs and benefits. Some of the future state descriptors focused on what staff could do (e.g., using terms well understood by customers) and others on new customer perspectives (e.g., customers understand the complexity of our system enough to advocate for our system).

**Root Cause Analysis.** Before jumping into actions necessary to move from the current to future state, the team went back to the descriptions of the current state to ensure they were solving for actual root causes and not just symptoms that were hiding something deeper.

The tool used for this part of the business planning process will be familiar to anyone who has participated in any sort of process improvement: a Five Why analysis. The four-hour training for supervisors and managers provided a refresher in how a Five Why analysis can push teams to solve for root causes rather than superficial solutions that target only the symptoms of a larger problem.

In this exercise, the team asked “why do customers think that the County is pocketing money from the sale of recyclables?” The first answer was that customers think the materials put in a recycling cart are more valuable than they really are. Subsequent iterations of asking “why?” brought the team to a conclusion that the County and service providers don’t always use the same language and are not consistent in identifying and delivering key messages. The team repeated the exercise for each aspect of the problem they identified in the current state, revealing additional root (or core) problems:

- Failure to store data in an easily accessible and sharable format prevented its use in customer communications; and
- Staff rely on individual and collective memory rather than documentation to track what customers care about (over time).

Taking the time to identifying root causes avoids wasting time, energy and money on merely treating symptoms. More important, the team’s collective effort empowered them with the knowledge that whatever they would do next would actually make a substantial difference.

**Action Plan.** For the Waste Reduction & Recycling team, the rest of this exercise was much more of a sprint
than a slog. While it should be noted that at the time of the exercise, the team had more than 100 years of collective solid waste or public works experience, the main factor contributing to speed was the satisfaction in knowing that they had identified the right set of root causes.

For the three root problems shown above, the team took the following approach:

- **Using inconsistent language/ not using key messages:** Form a team with service providers to adopt consistent messaging for interactions with customers, train on, and consistently use, those new messages
- **Data storage:** Develop, use and maintain a common data management bank
- **Customer issue documentation:** Develop, use and maintain a customer inquiry logging tool

**Implementation and Feedback.** Before the team left the customer service business planning session, they identified who would lead each activity, when it would get done, and how the team would solicit feedback from customers to measure improvement. The primary follow-up work for the supervisor who led the planning session was to ensure that each identified implementation action flowed one-into-another and that the staff designated to work on implementation were not over-committed. To that end, work was scheduled over the course of a year to better integrate into other staff efforts. Feedback would be collected through continued use of an annual customer survey included with a fall/winter newsletter as well as through better tracking and logging of customer inquiries and conversations throughout the year.

**Time Commitment.** After the leadership team and consultant designed the tool framework, customer service promise and department policy (please contact the author if you are curious about that aspect of the work and the effort involved), supervisors attended a half-day training, most of which was designed to teach how to use the customer service business plan tool with staff teams. The Waste Reduction & Recycling team met with their supervisor for less than four hours to accomplish the work described in this article. Supervisory follow-up to make sure the schedule worked and to put the plan into a specific format took another three hours.

For the Waste Reduction & Recycling Team, some of the time committed to the process improvement was “made up” by including the results, action/implementation plan, and feedback program in employee evaluations and goal setting for 2017.

While not as clearly measurable, tackling the types of customer misinformation and miscommunication identified in their plan will reduce employee frustration and lead to higher employee satisfaction. As mentioned above, communications with customers who “just don’t get it” have led to employee frustration.

The Customer Service Continuous Improvement Cycle, which is the very last element of the supervisor’s training, is used to cement the concept that good customer relations leads to higher employee satisfaction and then on to even better customer service. For a Waste Reduction & Recycling Team that designs programs that are successful only when embraced by customers, this “virtuous cycle” is especially important.

**Closing Thought**

For those of us who have chosen public service careers, customers are the reason why we’re here and sometimes the reason why we can’t get a good night’s sleep. Pierce County Public Works recognized this connection and developed training so supervisors could lead staff teams in customer service business planning. As it implemented the training, in less than a day the Waste Reduction & Recycling team identified how gaps in customer communications were preventing the County from achieving its goals and were serving as a source for team member dissatisfaction. An action plan designed to solve root causes rather than symptoms is being implemented this year with ongoing efforts to measure and monitor changes in customer understanding and behavior.

Steve Wamback is the Sustainable Resources Administrator and serves as a member of the Department Leadership Team for the Pierce County (WA) Public Works Department. He is serving his second term on the APWA Solid Waste Management Committee and can be reached at steve.wamback@co.pierce.wa.us.
If you build it, they will come: Phoenix’s Solid Waste Apprenticeship Program

Felipe Moreno
Deputy Public Works Director
City of Phoenix, Arizona

Attracting and retaining qualified staff can be a challenge in any industry, but finding qualified sanitation drivers presents a unique set of challenges. Operating a 43,000-pound truck in tight spaces safely and efficiently to provide a critical public service takes precision, absolute focus, and a great attitude. Not to mention, sanitation drivers are one of the top five most dangerous professions in the world, even ahead of police officers and firefighters. Because of this, cities and private haulers are not only competing with one another for the talent pool, but they are competing with other industries involving commercial drivers that often pay more and provide a lower-pressure environment. The City of Phoenix Public Works Department is no stranger to this quandary. But, out of adversity and challenges comes the opportunity to adapt and innovate!

While the City of Phoenix continues to compete with other municipalities and commercial driver industries for the best and brightest, we also chose to change our lens on how to build a talented and diverse workforce for the future. Rather than focusing solely on competing for the existing pool of qualified drivers, we decided to grow our own, and out of this concept the City of Phoenix Solid Waste Equipment Operator (SWEO) Apprenticeship Program was born.

Working in collaboration with our partner, the Laborer’s International Union of North America (LIUNA Local 777), the SWEO Apprenticeship Program will be the first municipal program for sanitation drivers in the nation, bringing in people with no commercial driving or solid waste experience and developing them into a skilled SWEO. With the inaugural apprentice class set to launch in March 2017, the two-year program will allow for an apprentice to earn their Commercial Driver’s License (CDL), gain an understanding of the solid waste industry, and become skilled in safely and efficiently operating solid waste equipment used to collect refuse, recyclables, and green organics for the city. While this helps to solve the vacancy gap, the SWEO Apprenticeship Program seeks to do much more than this. The program will provide extensive outreach to veterans and women who are under-represented in the SWEO ranks, as well as youth who may be looking to start a career with the city in lieu of enrolling in college or a trade school. Once in the program, apprentices will be exposed to strong leadership, extensive training and mentorship to gain the skills needed to grow and have a long successful career with the City of Phoenix. After all, isn’t that what it’s all about?

For more information on the City of Phoenix’s SWEO Apprenticeship Program, please contact Felipe Moreno at (602) 256-5625 or felipe.moreno@phoenix.gov.

Felipe Moreno has worked for the City of Phoenix for 17 years. As the Deputy Public Works Director over the Solid Waste Field Services Division, Felipe oversees solid waste and recycling collection for over 400,000 households. He manages a budget of $71M and over 320 employees. He holds a Bachelor of Science in Family and Consumer Resources from the University of Arizona, Tucson, Arizona, and a Master of Science in Social Work from Arizona State University, Tempe, Arizona.
The process improvement train is leaving – are you on board?

Neal Bolton, P.E.
President
Blue Ridge Services, Inc.
Mariposa, California

Process improvement is used by some of the top companies in the world, including Motorola, Toyota and General Electric. Designed to help analyze and ultimately increase efficiency, process improvement utilizes a wide range of tools, including Six Sigma, Lean, Value Stream Mapping, Customer Experience Management (CEM), and more.

At the heart of process improvement is the ability to evaluate a current process or activity, identify in detail what’s working and what isn’t, and then come up with ways to improve the system.

These simple steps, when applied to any repetitive process, can help streamline the operation, increase efficiency, and reduce costs. You might think that these kinds of analyses are geared toward the repetitive tasks associated with assembly-line manufacturing or document processing—and you’d be right. But you might be surprised to learn that those same techniques that make Wall Street Journal news for international mega-corporations are also used to increase efficiency and reduce costs in an often-ignored industry—the waste industry.

That’s right. Those repetitive tasks, such as picking up trash cans on a residential collection route, moving waste through a transfer station, compacting load after load of waste, or hand-picking recyclables at a MRF, can be analyzed. We’ve been doing it for years and yet are constantly learning new ways to analyze the same old day-to-day tasks.

Changing Landscape
The solid waste management industry is under intense, ongoing pressure to do more with less. The traditional funding model, where disposal fees pay for every post-collection activity, is outdated. Over the past two decades, recycling and economic factors reduced the quantity of solid waste disposed, and as a result, revenue also declined. Surprisingly, those declining revenues were often tapped to pay for more recycling, which further reduces disposal revenue.

While solid waste operations were making less money, municipalities continued to increase funding for recycling programs. This further decreased revenue generated by disposal fees and waste collection. During this same time period—starting around 1990—the number of landfills in the U.S. decreased from around 8,000 to less than 2,000. Two primary factors led to this decrease: more stringent environmental regulations and increased competition between facilities.

Applying process improvement techniques to waste facility operations is not a canned process. Every site is unique, and thus each facility must be evaluated by specific tools and in a specific way that specifically identifies inefficiencies and provides practical and economical solutions.

The most practical and successful way to deal with inefficiencies is to conduct an in-depth operational assessment.
of your facility. But they aren’t a quick fix. They take time to conduct, and even longer to implement. For small, simple operations an operational assessment can take several weeks; for large, complex operations with lots of ancillary activities the process can take months. But, in the end, you’ll be applying numbers to those operational black boxes that heretofore have simply been based on our personal opinions—most folks call them guesses.

However, taking the time to dive into an operation—and examining it from top to bottom, the good, the bad, and the ugly—can reveal inefficiencies that when corrected, can lead to significant savings in both time and money.

Here are just two examples from our work consulting at hundreds of waste facilities globally:

**Case Study #1**
After conducting a comprehensive operations review (CORE), a 900-ton-per-day regional landfill identifies excess machines and generated $880,000 in auction revenue. Non-productive equipment hours with the remaining machines were minimized, resulting in additional savings of $20,000 per month in reduced fuel consumption. Associated staff reductions efficiencies in fill sequence planning and a drastic reduction in cover soil usage, along with increased waste compaction, netted this county savings of $4 million the first year—and projected savings of approximately $2 million per year ongoing—throughout the life of the facility.

Oh, and they are currently running at a 13.5:1 cover ratio!

**Case Study #2:**
A 2,700-ton-per-day landfill was able to cut their D9 dozer fleet in half—going from five D9 frontline pushing dozers to two—along with a part-time backup dozer. During that same time, they increased their Airspace Utilization Factor (AUF) initially by 28%—with the latest figures indicating it may be trending even higher—perhaps approaching a 45% increase.

**Case Study #3:**
The City of Helena, Montana’s commercial and residential collection trucks had traditionally delivered waste to the City’s transfer station, rather than hauling directly to the local landfill. Those trucks would dump waste at the transfer station, where it would be reloaded into larger transfer trucks, then hauled to the landfill—sometimes driving back through the same areas the route trucks had serviced just hours before.

This, despite the fact that the landfill was often closer to some of those routes—and offered a disposal (tipping) fee that was 56% lower than the transfer station’s rate of $70.75 per ton. This practice had become so normalized over a period of 20 years that nobody even questioned it. It had become, “...the way they’d always done it."

No Time to Think
Why do these types of inefficiencies persist? Because facility operators accept the status quo and do not take time to think about how to cut costs. I teach a number of classes each year for clients and at conferences and webinars. During these classes, I often ask waste facility managers, “Do you have eight hours per week to simply sit and think about your operation?” This will get a good laugh. Then I’ll...
ask again, “Four hours per week? Three hours? One hour per week?” Occasionally, someone will admit to taking an hour per week to think about their operation, but not very often. My next question is not nearly as funny: “So, if you’re the manager and you aren’t taking time to think about your operation, who’s thinking about it?” Of course the answer is “nobody.”

**Pinpointing the Solution**

Ever wonder why your waste facility has to work on the weekend because it falls behind during the week? Well, it’s because some portion of your system’s flow rate is creating one or more bottlenecks. Every system has at least one bottleneck—or constraint, as it’s referred to by the process improvement crowd.

Think of the overall system as a pipeline, with the daily waste tonnage flowing through it. Each step in the process has a certain flow rate (i.e., the pipe gets smaller or larger). When viewed as an entire system, this type of model can pinpoint the constraints and help identify solutions for increasing production—or changing the system to work around the constraint.

At the heart of process improvement is the ability to model a current process or activity, identify—in detail—what’s working and what isn’t, and then come up with ways to improve the system. If you think there are opportunities for improvement in your current system, chances are you’re right. After conducting these types of assessments at waste facilities across North America and abroad, we have found that every operation has room for improvement—every single one.

The bad news is that many waste facilities are not tapping into the benefits offered by process improvement.

The good news is: Any waste facility can begin applying these tools. Start by tracking various performance benchmarks such as dozer hours, compactor hours and the quantity of soil used for cover. Look for variation from day to day—or between different operators. Variation almost always indicates an operational problem—and inefficiency—and is a great place to start making small improvements.

Neal Bolton is a civil engineer with 38 years of experience in heavy construction and landfill operations. He has conducted process improvement consulting and training at hundreds of waste facilities worldwide. He can be reached at (209) 742-2398 or neal@blueridgeservices.com.
Engaging solid waste employees

Trent Tompkins
Director, Waste Collection Services
City of Edmonton, Alberta
Chair, APWA Solid Waste Management Committee

It all starts with a job posting in the local paper or your organization’s website. Then you wait for the posting to close, screen the applicants, schedule interviews and hopefully find the successful candidate. Think you are done? Not quite. Now you may have fitness testing, corporate onboarding, safety training, pension plan, benefits plan, operator licensing and the list goes on. After all this you take your new employee to the truck and ask them to load over 40,000 pounds of waste per day by hand and see if they come back for the second day. For most people this would seem crazy but for employees still involved in manual curbside waste collection, this is reality.

Public works organizations spend significant time and money attracting new staff and want them to stay in one of the hardest working and fifth-most dangerous occupations in North America. Employees are the core of waste management operations, whether they are collectors, equipment operators, engineers or supervisors. They are the face of the operation and we depend on them to show up every day to get the work done, provide exceptional customer service, and be ambassadors to our residents and customers. In order to get the most from your operations you need engaged and productive employees who want to succeed.

Employee engagement is critical to maintaining working relationships and productivity. “One of the worst comments I hear from new leaders to an employee is, ‘What does it matter, you are paid by the hour, just do it,’” says Dave Budzinski, General Supervisor of Collections for the City of Edmonton. “Most staff want to do their part by recognizing that wage isn’t the only motivation. You can start to focus on removing barriers for your staff and help them contribute.” Examples may include helping to ensure that the transfer facility or landfill tipping area is operating efficiently, or snow is cleared, or road construction is known well in advance. Making a phone call or sending an e-mail to another department can help your staff get their work done and is one of the simple steps you can contribute each day to keep your staff engaged.

Does your staff see you? Are you there on the days you ask them to do more, stay longer, and work in poor weather conditions? Sometimes this is called “management by walking around” and is one of the simpler management changes you can make. If you are like me, you feel that your contribution is from behind the keyboard, working on budgets or strategic plans that help keep the overall program moving forward. However, getting out and talking to staff is critical to providing updates, getting feedback, and being accountable for your decisions. Also, I have never found much success lecturing to 100 people, but I have had great conversations with 15 people. The message can get lost when addressing large groups, while smaller groups keep the conversation personal and allow for two-way communication and feedback.

Do you share information or do you keep it secret? Sharing with your team about your objectives and performance helps your staff see how they can contribute to your organization. This means regularly sharing your strategic goals and your operational productivity measures and providing updates on their progress. Communicating the measures, their importance and that they are part of your shared success helps everyone work towards the same goals. Your productivity may include tons per load, tons per hour, absenteeism and other measures critical to your operation. Don’t only consider the strategic or corporate goals; focusing on small wins that are important to your staff will help you achieve the big goals and build your team. Once you have achieved the goal or a milestone,
Staff members need the resources to do their jobs and be successful. This can mean supplying the right equipment, proper tools, and work environment to do the job. If you provide personal protective equipment (PPE) provide a few options. If staff need to wear the gear to stay safe, and it is comfortable and fits their personal preference, they are more likely to wear it. Being prepared for physically demanding jobs is important and we have found that helping people one on one has benefits. After a few years with little to no success using group stretches, we started working with an occupational therapist to develop job-specific stretching and strengthening exercises and provided individual training sessions specific to the staff. This allowed each individual to work on areas specific to them and prepare for the work day on the beat or in the garage. The result was increased retention of the core stretching techniques along with an opportunity to engage the employee on other topics such as nutrition, sleep and occupational fitness, and demonstrated that we were committed to their well-being.

Engaged employees who contribute to your organization also contribute to your community. Including your frontline staff in your community helps to connect them to the people they serve. News stories, press releases, videos or television highlights all help to elevate the role your staff plays in the daily rhythm of the community. Everything that you can do to reinforce the positive value your waste operation brings to the community will help build pride and a team atmosphere. There are examples of collection vehicles covered in art in several cities, school tours to transfer stations, and tours from other cities that could involve your frontline staff and become a source of pride.

We are all employees and have our jobs to do. A small gesture in our office is a snow shovel at our front door. It’s a tool that we can all use and keeping the steps clean in the winter is a benefit to everyone who enters the building. If the steps need to be cleared, no one is too important or too busy to help. The shovel is a reminder that we do our work as a team and as a team we can be successful. Demonstrating that we all help to get the work done illustrates what we expect from every employee.

Public art can help increase the profile of your waste operations.

Waste management employees work in some of the most physically demanding and important jobs in public works. Staff who are the perfect combination of attitude, skills and ability are tough to find and harder to keep. If you take steps to work with your staff, engage them, help them and thank them, they can be successful and keep your waste management service a highly engaged customer-focused operation.

Trent Tompkins can be reached at (780) 496-6681 or trent.tompkins@edmonton.ca.
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Harper Turf TV35 features new robust design, hydraulic cooling system

Building on a legacy of its 30th year in the turf industry, Harper Turf Equipment has unveiled details of the next generation of self-propelled turf vacuums: the TV35. This redesigned vacuum promotes time-saving and economical features such as a new cooling system, ergonomic operator station and smooth foot-pedal operation. The most noticeable change is the remote-mounted radiator and oil cooler for improved temperature control. The hydraulic-powered cooling fan can be reversed to blow debris off the screen. When it’s time to service the machine, the screen easily removes for deep cleaning. The operator station layout addresses performance and well-being through the ergonomic control placement and convenient adjustments. For more information, please visit www.harperturfequipment.com.
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May 18 UFO or UAV? The Welcome Invasion of Drones in the Public Works World
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