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www.wasteadvantagemag.com April 2013 Vol.4, No.4

Waste Advantage

magazine

The Advantage In the Waste and Recycling Industry



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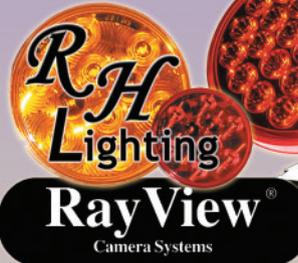
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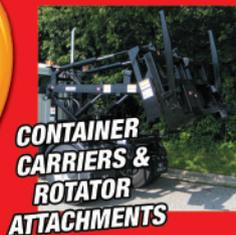
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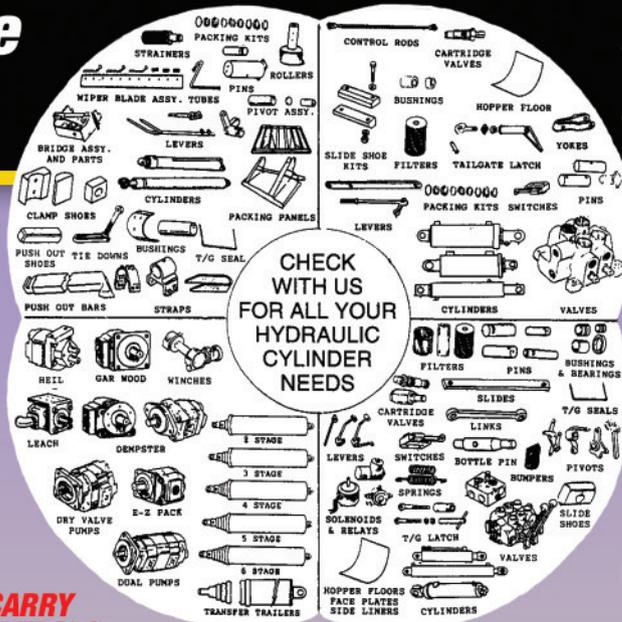


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**SEE MORE OF OUR INVENTORY ON
 PAGES 58-61.**

Editor's Note



SPRING IS HERE AND AS THE WASTE EXPO DRAWS NEAR, WE ARE EXCITED

about what the event brings to the industry—new technologies to see, new methods to share, new regulations to discuss and much more. How do you plan on spending your days at the show? With so many options, it is hard to decide where to start first. One thing is certain: none of us will walk away without having learned something or having made new contacts. Be sure to visit *Waste Advantage Magazine* in booth #4631 and talk to us about something cool that you've seen or heard, or just stop by to chat. We enjoy discussing the new possibilities.

We have a standout issue for you this month. Our "In the Spotlight" (page 16) features an organization that has spent a considerable amount of time refining their business by collaborating with other communities, standardizing their fleet and implementing vigorous safety programs as well as focusing on customer service. Gilbert, AZ's Environmental Services Division is a must read for those looking to do something different.

Other great articles focus on scale best practices (page 21), frequently asked questions about the Distracted Driver Law (page 26), and implementing an electronic message board program in order to reinforce your employees' safety and keep them informed (page 28). And don't miss our Recycling/Landfills/Transfer Stations section (page 37) which highlights tips for an effective landfill cover (page 38), working with the community (page 40) and methods to process organic waste (page 44).

Be sure to visit www.wasteadvantagemag.com for all the up-to-the-minute news that's happening in the industry as well as additional article tips, more highlighted products, surveys, access to past issues and more. Feel free to contact me with any questions, comments, concerns, etc. as needed, I am always open to suggestions. I look forward to seeing all of you next month at the Waste Expo in New Orleans.

Best Regards,
Angelina Ruiz

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A Review of the Rail Industry and Its Impact on Waste Transportation

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On the Cover:

From left to right: Gilbert, AZ Environmental Services Division's Team: Joslyn Marty, James Poston, Jaimie Perkins, Louis Andersen, Jack Minkalis and Paul Montes.

Photo courtesy of Gardenia Lamadrid, Gilbert Digital Journalist.

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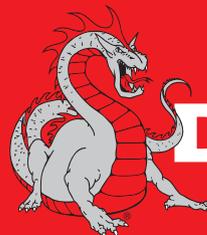
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Wastequip Adds Key Leadership Positions

WASTEQUIP (Charlotte, NC) has added several key leadership positions to support its new mobile products division. Shawn King has been named as president of the mobile products division, assuming responsibility for the Galbreath, Cusco, Mountain Tarp/Pioneer and Parts Place brands. Connie Lepley has been hired as general manager for Galbreath. Anne Brantley has been promoted to director of product management for the mobile products division. Anne was previously the product manager for Wastequip's container division. Brian Hatter has been hired as general manager for tarps with responsibility for all tarps facilities including service and installation locations. Chris Nicolazzo was promoted to vice president of finance for the mobile division.

For more information, call (877) 468-9278 or visit www.wastequip.com.

Picvsa Opens an Office in North America

PICVISA has established a new U.S. subsidiary and announced the opening of a new office in the U.S. The company name in the U.S. is now PICVISA Recycling Technologies, Inc. The office will be centrally located in O'Fallon, MO, which is in the St. Louis area. The office will be run by Dan Morris, PICVISA's North America Sales Manager. "The successful entry into this market last year will be quickly followed this year with a strong local presence in order to best support our customers." Says Luis Sousa, PICVISA Sales Director, "Having a centrally located office is a first step in establishing a world class support structure for spare parts and service as well as sales and administrative functions."

For more information, call (636) 293-9271 or visit www.picvsa.com.

New Way Partners with DHAPSA Corp.

NEW WAY TRUCKS (Scranton, IA) has joined forces with DHAPSA Corporation, one of Mexico's foremost manufacturers of commercial vehicle superstructures. The joint venture will produce New Way brand Cobra, Viper, and Diamondback refuse bodies to Mexico, Central America, and South American markets and will continue New Way's growth into new markets around the globe. "All of us at Scranton Manufacturing are excited about our joint venture with DHAPSA. The joint venture will open doors to business throughout Mexico, Central America, South America and beyond," says Phil Allen, VP of Sales and Marketing. "The joint venture will not affect New Way's USA workforce and New Way will continue to service our USA customers from our main facilities in Scranton and Carroll, IA as always."

For more information, call (800) 831-1858 or visit www.newwaytrucks.com.

Brad Nelson Promoted to President of the Commercial Segment of Oshkosh Corp.

OSHKOSH CORPORATION (Oshkosh, WI) announces that Brad Nelson has been promoted to Oshkosh Corporation Senior Vice President and President of the Commercial Business Segment. "We are very pleased to have an individual such as Brad Nelson, who has significant marketing, product and business development expertise, lead our Commercial segment," said Charlie Szews, Oshkosh Corporation Chief Executive Officer. "Brad's experience will be very valuable as our commercial businesses seek to continue their impressive operational improvements, and ramp up to take advantage of the market recovery for construction equipment and the economy in general."

For more information, visit www.mcneiluscompanies.com.

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APRIL 2013

22 – 24: 21st Annual North American Waste-to-Energy Conference
 Sanibel Harbour Marriott Resort & Spa
 Fort Myers, FL
<http://nawtec.swana.org>

24 – 26: 42nd Environmental Show of the South
 Gatlinburg Convention Center
 Gatlinburg, TN
www.tn.gov/environment/swm/conference

MAY 2013

1 – 2: John Zink Institute Landfill Flare Training
 Tulsa, OK
www.johnzinkinstitute.com

2: 2013 PA Recycling Markets Development Summit: Spotlight On Plastics and the Plastics Manufacturing Symposium
 Penn College of Technology
 Williamsport, PA
www.parmc.org

5 – 8: 2013 Federation of New York Solid Waste Association's Conference and Trade Show— Strive for Sustainability
 The Sagamore
 Lake George, NY
www.nyfederation.org

14 – 16: The ZONE 2013
 Grand Hyatt Riverwalk
 San Antonio, TX
www.zonarsystems.com

16 – 17: Anaerobic Digestion & Biogas Conference 2013
 The Hotel Kabuki
 San Francisco, CA
www.renewable-waste.com/anaerobic-digestion-conference

20 – 23: Waste Expo 2013
 Ernest N. Morial Convention Center
 New Orleans, LA
<http://wasteexpo.com/wasteexpo2013/public/enter.aspx>

28 – 31: WasteTech-2013
 Crocus Expo
 Moscow, Russia
www.waste-tech.ru

29 – 31: 4th Annual 'Save the Planet' — Conference & Exhibition on Waste Management, Recycling & Environment for South-East Europe
 Inter Expo Center
 Sofia, Bulgaria
www.eco.viaexpo.com/en/exhibition

JUNE 2013

24 – 27: Safety 2013
 Las Vegas Convention Center
 Las Vegas, NV
www.asse.org/education/expo13

25 – 28: Air & Waste Management Association 106th Annual Conference and Exhibition
 Hyatt Regency Chicago
 Chicago, IL
<http://ace2013.awma.org>

JULY 2013

19 – 22: 2013 National Association of Counties (NACo) Annual Conference and Exposition
 Fort Worth Convention Center
 Fort Worth, TX
www.naco.org

24 – 26: 23rd Annual Recycling & Organics Conference
 The Woodlands Resort
 Wilkes-Barre, PA
www.proprecycles.org

28 – 20: 2013 Summer Conference
 Hyatt Regency Sarasota
 Sarasota, FL
www.swanafl.org

AUGUST 2013

15 – 17 Florida League of Cities' 87th Annual Conference
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Government Gossip



NSWMA Supports Legislation That Would Reduce Solid Waste Management Costs in Missouri

The Missouri Chapter of NSWMA voiced its support for Missouri Senate Bill 13, which proposes to restructure solid waste management districts and allows for the current grant funding to be allocated more efficiently for cities and counties for waste reduction and recycling. The grants are funded by a “tip fee” that is collected at transfer stations or landfills. This bill was proposed by Missouri Senator Kurt Schaefer, who represents Boone and Cooper counties (District 19).

Peggy Macenas, Regional Manager of the Missouri chapter of the NSWMA, said, “We applaud Senator Schaefer’s proposed legislation. This bill reforms, modernizes and reduces government bureaucracy. It will also aid in curbing costs to Missouri residents and business owners for solid waste management while allowing for increased recycling. Missouri is now a leading recycling State and Private-sector haulers account for the vast majority of recycling in Missouri. It is also worth noting that most of the private entities that do this recycling do not receive or require grants or subsidies.”

Kevin O’Brien, Chairman of the Missouri Chapter of the NSWMA, said: “The members of NSWMA have implemented recycling in most of its Missouri markets with limited or no grant funds to date. In fact, if the subsidies go away members and other entities can begin to compete for recycling in all areas of the State that our members serve.”

For more information, visit www.nswma.org.

SWANA Issues Policy on Safe Recycling of Electronic Waste

The International Board of SWANA has approved a policy regarding the safe recycling of electronic wastes. As an organization of solid waste professionals, SWANA supports the following policy positions on responsible recycling of electronic waste:

- Regional and local governments should endeavor to assure that flexible and cost-effective recycling options that meet applicable state and local requirements are available to all households and businesses within their jurisdictions.
- Federal governments should assure that options are available for the reuse and/or recycling of e-waste generated by all federal departments and agencies.
- All levels of government should require that recycling facilities comply with enforceable worker safety, public health and environmental standards. Requiring recycling facilities to be certified under recognized, national recycling certification programs would facilitate compliance.
- Federal and international programs and conventions should prohibit the international shipment of e-waste to facilities that do not comply with standards for worker safety and public health and the environment, and to countries that do not have regulatory programs to enforce such standards.
- Prior to implementing a ban or restriction on the disposal of e-waste, infrastructure must be in place to regulate, collect, store, transport, re-use, recycle or re-manufacture the e-waste.
- Owner/operators of solid waste facilities should be protected from liability for the inadvertent disposal of banned e-waste if they carry out waste screening programs in accordance with the provision of the facility permits and have made good faith efforts to post signs and notify haulers that covered electronics are not accepted by the facility.

For more information, visit www.swana.org.



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RFS Renewable Identification Number Quality Assurance Program

Under the Renewable Fuel Standard (RFS) program, producers and importers of renewable fuel generate Renewable Identification Numbers (RINs) that are used by petroleum refiners and importers to demonstrate compliance with their renewable fuel volume obligations. Several cases of fraudulently generated RINs, however, have led to inefficiencies and a significant reduction in the overall liquidity in the RIN market. The result has been greater difficulty for smaller renewable fuel producers to sell their RINs. This action proposes additional regulatory provisions that would promote greater liquidity in the RIN market in a way that assures reasonable oversight of RIN generation and assures use of the required renewable fuel volumes. The proposal includes a voluntary quality assurance program and related provisions intended to meet these goals. The proposed program also includes elements designed to make it possible to verify the validity of RINs for all of 2013.

Additionally, the EPA is proposing a number of new regulatory provisions to ensure that RINs are retired for all renewable fuel that is exported and to address RINs that become invalid downstream of a renewable fuel producer.

For more information, contact Mary Manners, Office of Transportation and Air Quality, Compliance Division, EPA, at (734) 214-4873 or via e-mail at mmary@epa.gov.

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Gilbert, AZ Environmental Services Division: Refining the Business

From collaborating with other communities on how to improve waste collections to improving operations through vigorous safety programs, customer service and standardizing their fleet, Gilbert, AZ's ENVIRONMENTAL SERVICES DIVISION CONTINUOUSLY LOOKS FOR WAYS TO GROW AND STRIVE.

NESTLED IN CENTRAL ARIZONA, THE TOWN OF Gilbert has seen incredible growth over the last 40 years, from approximately 1,900 people in 1970 to about 220,000 today. As a result, the town has always been involved in solid waste collection services. Their Environmental Services Division collects residential waste and recycling, household hazardous waste, white goods, bulky items and provides front load and roll-off services for commercial and industrial customers. The Division began collecting single-stream recycling in 1992 with fully automated collection vehicles and now employs a staff of 85, while operating 31 automated side loaders, 14 rear end loaders, seven wheel loaders, five front end loaders and three roll-off trucks. Gilbert's planning area encompasses 72 square miles and services 69,000 residential homes and 1,100 commercial/industrial customers.

Refining the Business

"Over the last five years we have been on an economic roller coaster," says Louis Andersen, Environmental

Services Manager. "We went from averaging 400 to 550 new homes per month in 2006 to fewer than 100 during 2007 and 2008. Keeping up with that rapid growth would not have been possible without committed and engaged employees; the staff here really made that happen. Each team member played a key role from the drivers picking up larger routes to supervisors working late and our continuous rerouting. We were always a little behind with staffing and equipment. Currently, we are back to delivering about 200 homes each month."

Safety

Andersen stresses that the economic downturn provided the Division time to refine their business by refocusing their attention on safety. "We decided that safety is most important to us all and that our employees should go home safe every day. We established a safety strike team, updated our safety manual and operating procedures, and trained all staff on the Franklin Covey Method." This method trains managers on the four disciplines of execution (4DX) and the importance of

Automated side load unit Peterbilt 320 with Wayne Curbtender body. L to R: Jaimie Perkins, Commercial Supervisor; Joslyn Marty, Recycle Administrator; James Poston, Residential Supervisor; Louis Andersen; Jack Minkalis, HHW and Bulk Supervisor.





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Gilbert, AZ Environmental Services Division: Refining the Business

focusing on a particular area each day. With 4DX, you identify and execute each item or priority and come up with lead measures, so that each employee can follow them.

After Andersen was trained in the 4DX method, he trained the Division's 85 employees and supervisors, which helped to gain their buy-in on making safety the most important goal. In addition, the NSWMA Safety Director, David Biderman, was enlisted to come out and provide additional safety training for supervisors. He also invited other Valley cities to join in, including managers and supervisors from Tempe, Mesa, Prescott and Scottsdale. The method was kicked off to all employees on July 1, 2012.

"Currently, we meet each week to see how we are doing on that particular item," says Andersen. "So far, we have seen phenomenal results. We have only had one safety injury and one singular accident since we began the 4DX method." Andersen goes on to explain that since implementation, his management staff has noticed that the entire employee team is more engaged in the safety aspect. "Observing management stress, the importance of safety has really encouraged all employees to get on board with the program," explains Andersen. "Each month, on a rotating basis, drivers share a safety topic, such as being in full safety gear at the beginning of your shift, with fellow employees."

Customer Service

In addition to safety, focus on customer service has also remained at the top of the priority list. "We developed a vision in 2007 to be the best municipal solid waste operation in the country," says Andersen. "We continue to work hard, learn and watch for new opportunities."

James Poston, Field Supervisor for the Division's residential routes, suggested that they look to the drivers for input on how to improve customer service. "The drivers interact daily with our customers and have a valuable perspective," says Poston. Once that was done, Poston found that the drivers wanted to be able to give the kids something when on their routes in order to encourage truck safety. The idea has been implemented and each driver now carries small spongy garbage trucks and recycling container toys with them. "The drivers came up with the idea and we have continued doing it," says Poston. "It has been a great success thus far."

Additional customer service improvements include online service requests, versus having to go exclusively through a call center. Co-mingled recycling service has been added for all existing commercial customers and multifamily housing residents at no charge. Gilbert also offers residents a free one-time delivery per month of MSW to the landfill or transfer station.

Household Hazardous Waste

In July 2007, the Gilbert opened their Household Hazardous Waste (HHW)



Martin Chavez next to the antifreeze recycle container. Photo courtesy of Joslyn Marty, Recycle Administrator.

facility, which has proved to be a very popular program. Jack Minkalis currently manages the facility and says that the facility has serviced more than 23,000 customers and collected more than 1.7 million pounds of hazardous waste since its opening. The 4,000 square foot facility was part of a Capital Improvement Project that included the South Area Service Center in the southeastern part of the community. Prior to the HHW facility, the Division held two to three events annually, but they were only capturing a small amount of the HHW generated by citizens. The cost of hosting these events was also a concern as the Division had to pay staff to work an eight-hour event three times per year.

"We benchmarked our operations against cities like Flagstaff and Tempe who already had HHW collection facilities and decided to build our facilities based on the lessons they learned," says Minkalis. "We now collect paint, tires, batteries, cleaning agents, motor oil, gasoline, flammables, pesticides, herbicides and any chemicals that don't belong in the waste stream." The HHW facility is open to the public three times per week—Wednesday, Friday and Saturday.

At the HHW facility, the Division continuously looks for opportunities to recycle and has just implemented a new policy for paint collected from residents. Working with the non-profit organizations, Gilbert Cares and Habitat for Humanity, HHW makes available to them, free of charge, the paint collected. The facility also recycles all of the good paint that comes into the facility by mixing the colors to create a popular light tan color that is available to residents for the asking. HHW has drop off points for electronic waste, batteries, light bulbs, cardboard, and carpet and foam pad recycling. Gilbert offers free appliance pick up as well.

In November 2012, Minkalis worked with neighboring Town of Queen Creek (pop. 7,200) to develop an Intergovernmental Agreement (IGA), which allowed for Queen Creek residents to deliver HHW to Gilbert's collection facility for a fee. The IGA was approved by both Queen Creek and Gilbert Town Councils, and Queen Creek residents are already enjoying use of the facility. "Through all of these programs, the HHW currently diverts 89 percent of the waste dropped off at the HHW from landfills through recycling and reuse," says Minkalis.

Awards and Accolades

State SWANA Rodeo Champions	2007, 2008, 2012
SWANA AZ State Solid Waste Operation of the Year	2008
Several National Driver of the Year Awards since	2005
EIA Driver of the Year Municipal	2007
EIA Driver of the Year Finalists	2006, 2008, 2009
State SWANA Driver of the Year	2008
Several National SWANA Rodeo first and second place finishes	



James Poston with residential team AM safety briefing.
Photo courtesy of Jack Minkalis, Gilbert HHW supervisor.



A portion of Gilbert's automated side load fleet.
Photo courtesy of Paul Montes, Gilbert Foreman.



Jeff Morales cleaning up after a bulk trash collection.
Photo courtesy of Ray Estrada, Bulk Trash Collector.

Local Collaboration

Andersen remembers back in the 1990s, when he was attending the annual SWANA Senior Executive Conference, discussing more regional ways for municipal solid waste operations to collaborate. Since then, he has been busy encouraging three other local cities to join together on a regional solid waste disposal proposal.

About four years ago Andersen started asking other Phoenix Valley solid waste directors to start meeting with him on a quarterly basis and he was able to get buy-in from Scottsdale, Mesa and a few other cities. "We call it the Solid Waste Director Regional Meeting because we can talk about things that affect each of us on a daily basis. In that discussion, I had brought up the regional disposal concept, saying let's join together and see what everyone is doing. Will Black (from Mesa) and I really champion this; we have gotten a great response from the city councils of Tempe, Scottsdale, Mesa and Gilbert."

"This is nothing new. Public safety has been doing this type of regional collaboration for years. The thought process was if we were to join forces we could likely see better pricing, but mostly save in the redundancies, because we are all doing similar bids at different times of the year."

Now, all four regions have signed an inter-governmental agreement to solicit for disposal options together, which will save time and money by looking

regionally rather than just locally. Andersen stresses that it is important for all municipalities to look for regional opportunities when they are available because each municipality deals with similar challenges.

Staying in Front

One of the strategies that the Division deployed several years ago was getting away from having multiple trucks with different chassis and bodies and moving to standardizing the fleet in order to save on costs. The ultimate goal of doing so was to have one style of automated side loader, front-end loader and rear loader. This means, that if a truck is down for that day, not only can any driver use any truck, but they will also be familiar with the cab and configuration.

Andersen points out that this move also helps with safety concerns, maintenance and inventory costs. "When you are not stocking parts for five or six different types of vehicles, it allows for our mechanics to have better maintenance times since they do not have to learn the multiple systems. In turn, we have less downtime and our annual savings in maintenance is about 15 percent—all of this is from standardizing our vehicles."

So far, it has taken about 10 years for the Division to standardize the fleet. Within seven years, the automated side loaders were replaced, while the front

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loaders and rear loaders were replaced within 10 years. Truck replacement was staggered based on fleet size, age and population. “Standardization of the fleet has paid huge dividends for safety, driver familiarity, as well as fleet maintenance and inventory costs,” says Andersen.

Since driver appreciation is a priority, the Division tracks accidents or incidents and holds a company BBQ mid-year to appreciate a job well done. At the end of the year, the drivers who have not had an accident in the last 12 months receive an award, such as jackets, gift cards, multi-tools, pins, etc. The Division has also created a plaque that shows drivers who have had no accidents for each year.

Poston adds, “We’ve upgraded our safety record and about 98 percent of our drivers now go annually without an accident. We have one driver that has gone 17 years without a single incident. The little things we do to show our appreciation helps to keep the morale up. We have encouraged safe driving by taking advantage of NSWMA’s classes on coaching refuse truck drivers as well as displaying the Slow Down to Get Around stickers on our vehicles.”

David Biderman has also come in to hold a seminar for several cities and supervisors to talk about safety and ways to send that message to staff. Since the implementation of this program, over the 10 years Andersen has been with Gilbert, the claims went from more than 10 per 100,000 miles driven to under three—a great accomplishment for the Division.

Outreach Programs

Gilbert’s Environmental Services Division has also been involved in a number of outreach programs, focusing particularly on community education. The Division participates in new resident socials where they talk about the services that are available to them as well as taking part in any number of community events, such as 5K/12K runs, fall festivals, etc. “We like to have a presence at as many events as possible,” says Joslyn Marty, Recycle Administrator. “During community 5K/12K runs, we are onsite to encourage people to recycle their plastic bottles, cans, etc. as they are going by. Quarterly, we host town-wide collection events of electronic waste, textiles, cardboard and shredded paper. During our recent 2012 holiday community collection event, we diverted 54 tons of holiday trees, 2 tons of cardboard and 2,000 pounds of electronic waste from our waste stream. Gilbert residents are very involved and have a sincere desire to be part of the solution,” says Marty.

“We work closely with local schools to provide recycling and compost containers. Our ideas go beyond traditional outreach borders. We just partnered with the Girl Scouts, giving them the opportunity to take a class and complete a recycling project at our South Area facility to earn one of their merit badges. The educational displays we produce are creative and engaging and encourage our residents to think about the impact of small choices they make each day regarding reduce, reuse and recycle behaviors.” Marty continues, “In November 2012, I spearheaded the creation of the East Valley Recycling Alliance (EVRA). This informal group of Recycling Administrators from seven neighboring cities/towns convenes monthly with a specific agenda to discuss challenges we face and come up with solutions. We share information on best practices, swap recommendations on vendors, give input on each other’s educational material and pool outreach resources if we can. We feel we have a common goal to increase the diversion rate in our state of Arizona and we champion each other in our local efforts to do that. So far, our meetings have been very productive!”

This year, the Division will also create 14 banner ads to display on seven of their trucks. These ads will highlight community involvement, the HHW facility, particular super recyclers, as well as staff that do an outstanding job with recycling. Marty points out that they have a brand new Communications Division that will help them embark on the use of social media. “We already

submit monthly articles to our town blog that shine the spotlight on local Gilbert reduce, reuse and recycle heroes. We are also in the process of creating a Pinterest page to highlight all of the projects that the Division does with regards to reduce, reuse and recycle.”

“Digital communications has been one of the primary focuses of our new Town Manager and this is where we are going in the future,” says Marty. “Our Facebook page and Twitter account routinely receive questions about recycling. This shows us that there really is this need for education, not only for children but for adults as well.”

Challenges and Achievements

Andersen says that despite the challenges that the Environmental Services Division has dealt with over the last several years—rapid growth, continuous routing updates and staffing—the Division is an extremely well run operation that has been able to sustain the town’s rapid growth from 2003 to 2006 while maintaining financial stability. In 2012, they were able to reduce the monthly fee by 7.5 percent for customers. “We are running a business and by watching our bottom line, being efficient, increasing the number of cans per driver that are collected, we’ve been able to reduce our operating costs, standardize our fleet and reduce our landfill costs with the help from our private contractors, Republic Services and Waste Management,” states Andersen. “Our revenue exceeds our operating costs which is how we are left with a fund balance.”

The Division also has a vehicle replacement reserve account, which allows funds to be set aside for the purchase of new vehicles when older ones are at the end of their lives. Andersen says that there is also another operating budget that covers the maintenance and parts of the existing vehicles.

What does the future hold for the industry? Andersen believes that deciphering the emerging technologies on waste to energy or alternative waste disposal is going to be the next big step. “There are a lot of discussions about zero waste and product stewardship as well as alternative fuels, which is another aspect we are looking at, especially since the large national companies are moving in this direction. We’ve already purchased our first CNG car and we are evaluating the possibility of changing our collection trucks as well.” In addition, Andersen says that they are looking at how other processes are going to work financially and economically while continuing to move in the direction of zero waste and reducing their carbon footprint.

Focusing on the Future

Right now, Andersen says that the Division is focusing on increasing commercial and industrial recycle diversion. “Our current strategy of not charging for recycle collection is working. The free pickup gives local companies the incentive to reduce their waste generation and we are selling the material we collect to offset the collection costs. We are also continuously working on maintaining our high level of customer service and improving our safety record as our community rapidly grows year after year.” | **WA**

For more information, contact Louis Andersen at (480) 503-6426 or e-mail louis.andersen@gilbertaz.gov.

	Customers Served
April 2003	42,350
April 2004	44,850
April 2005	49,450
April 2006	56,450
April 200	57,630
April 200	60,890
April 200	62,735
April 2010	64,650
April 201	65,700
April 2012	67,215
December 2012	68,750



Best Practices for Truck Scale Owners

Mike Wilkinson

How you implement scale best practices is up to you. YOU CAN PARTNER WITH A QUALIFIED SERVICE PROVIDER TO MANAGE THESE TASKS, or you can go it alone. One thing is certain—neglecting your scale costs you profit.

IN TODAY'S RECYCLING AND SOLID WASTE INDUSTRY, uptime is of utmost importance. Most facilities experience long lines at the scale, and so they place a premium on getting trucks in and out quickly. However, have you ever stopped to think about how much you could be losing per truck?

When you placed your scale in service, the state Weights & Measures Department certified that it met the necessary regulatory requirements, and your manufacturer assured you that the scale was capable of holding to accurate tolerances. Unfortunately, external variables and real-world issues can knock your scale out of calibration and cost you a lot of money.

But just how much could it cost me, you ask? Take a look at **Figure 1**. A simple error of one increment (20 lbs.) can lead to \$30,000 in annual product loss. This is a real example and is based on a product with a value of \$.05 per pound and a duty cycle of 100 weighments per day. Imagine your business and the value of your product for a moment. Then consider implementing the following best practices.

Implement a Calibration and Inspection Agreement

The simplest step you can take is to implement a calibration and inspection agreement with your service provider. Depending on the requirements and type of weighing device, inspection costs can be as low as \$500 annually depending on the frequency required to assure accurate weighing and to reduce the risk of loss due to an inaccurate scale. Compared to the potential loss figures, this is a worthwhile investment.

But how often should your scale be inspected? It should be a minimum of two inspections per year for most scales, but the sort of heavy traffic which recycling and solid waste facilities experience can easily justify more frequent verification, inspection and service. Consult with your scale service company about a schedule that works best for your company.

What should you look for in a service provider? Investigate the longevity of the company—how long have they been in

business? Do they know the industry? Do they have solutions for the challenges that your business faces? Another good checkpoint is to compare the services provided among service providers.¹ The number one priority of a calibration and inspection program should be to make sure the scale is accurate by testing with certified weights that are traceable to a Federal standard. The servicing company should be able to produce documentation of the test weights' traceability. Make sure the scales are reviewed and the electronic and mechanical components are inspected to ensure that there is no wear or issues looming that could result in inaccuracies or unexpected downtime. After inspection, be sure the service company provides a written evaluation of the inspection and reviews the condition with you. This is by far the simplest and most economical way to avoid inaccuracies and unexpected downtime (see **Figure 2**, page 24).

Keep the Scale Foundation Clean

Recycling and solid waste operations can generate a lot of debris. Be sure to regularly remove the buildup to avoid scale inaccuracies. A pressure sprayer is a fast and easy way to clear debris and keep the scale and foundation free of buildup. Be sure that your junction boxes, electronics and load cells are properly rated to withstand pressure washing; otherwise, you may cause damage.

Perform Your Own Inspection

Inspect for anomalies. A properly operating scale is dependent on every component working together. Inspect the weighbridge for damage or signs of wear and corrosion:

- Examine the junction boxes inside and out. Do they show signs of damage, corrosion or moisture entry?
- Module connection hardware should be intact and not damaged.
- Check the load cells for damage, corrosion and signs of moisture entry into the enclosure and the cable entry gland.

Liquid is a good conductor and can easily short your electronics if allowed to enter the sensing element area.

• Some manufacturers feature quick disconnect-style load cell cables. Be sure to inspect these connections frequently as they are responsible for a significant number of avoidable failures.

• This is also a good time to inspect the wiring for damage. Exposed

100 Weighments Per Day Assuming 300 Working Days Per Year Estimated Value Per Pound						
		LBS.	\$0.01	\$0.05	\$0.10	\$3.00
20 lb. Error	Lbs. Loss Per Day	2,000	\$20	\$100	\$200	\$6,000
	Lbs. Loss Per Year	600,000	\$6,000	\$30,000	\$60,000	\$1,800,000
40 lb. Error	Lbs. Loss Per Day	4,000	\$40	\$200	\$400	\$12,000
	Lbs. Loss Per Year	1,200,000	\$12,000	\$60,000	\$120,000	\$3,600,000
60 lb. Error	Lbs. Loss Per Day	6,000	\$60	\$300	\$600	\$18,000
	Lbs. Loss Per Year	1,800,000	\$18,000	\$90,000	\$180,000	\$5,400,000

Figures courtesy of Fairbanks Scales.

Figure 1

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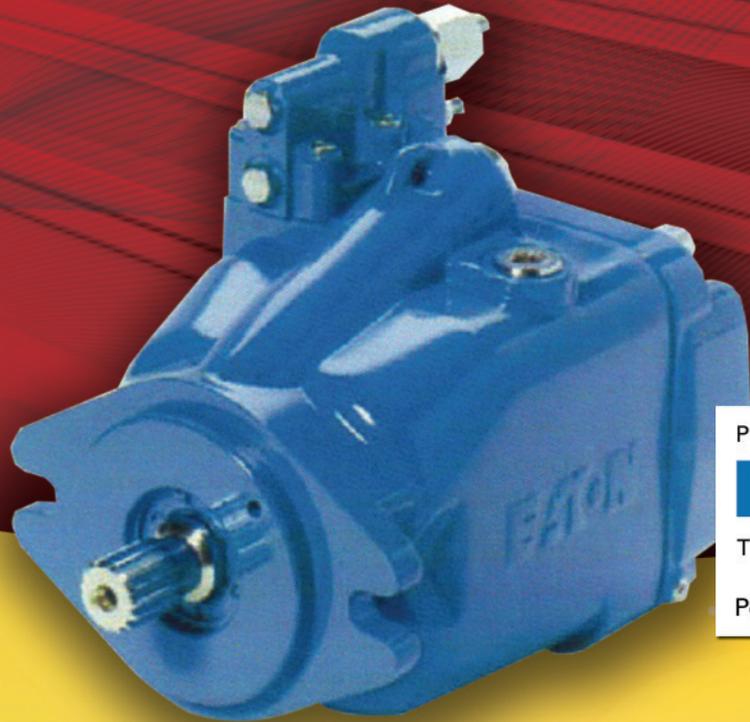
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Figure 2: Test weights used to certify a scale's accuracy.

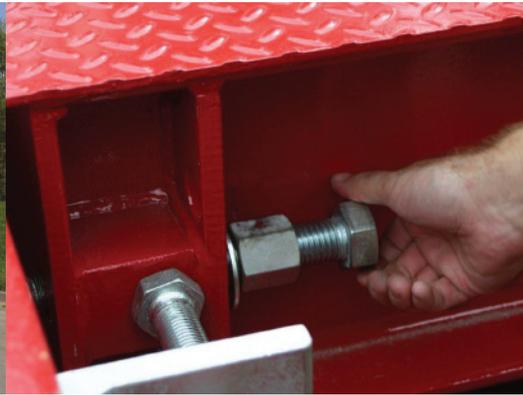


Figure 3: Inspection of the weighbridge for damage or signs of wear and corrosion.



Figure 4: Riser plates being used to elevate a weighbridge.

conductors cause communication errors when wet and are usually the culprit of erratic performance.

- Your scale's paint system isn't just for good looks. It's a critical barrier against scale corrosion on your weighbridge steel. Be sure to reapply if you expect maximum life from the weighbridge steel.
- If your scale has cover plates, inspect the connection hardware and make sure they are there, functional, and are not packed with mud and debris.
- Grease the load cell cups at recommended intervals. Some manufacturers incorporate zerK type fittings allowing grease application without the need to physically separate the load cell components.
- Inspect concrete for signs of failure. Address these issues as soon as possible. Left unchecked, they will only get worse and will cause larger—and more costly—problems (see Figure 3).

Make Adjustments

Your weighbridge will expand and contract slightly at different times of the year; this is natural. This thermal expansion requires attention and readjustment of your checking. The checking system on your scale keeps the weighbridge in place as it naturally rocks and moves from traffic. Too small a gap in the checking can cause binding and weighing errors. Too much gap in the checking allows excessive movement, up to and including a scale tipping. Excessive movement adds unnecessary wear to other components, so be sure the checking is properly secure.

Keep Your Scale Grounded

Today's truck scales use sophisticated electronics to communicate weight data to the instrument. A securely grounded scale is a basic defense from lightning and power surges. Be sure that the scale is connected to the manufacturer's specified grounding system and that there are no interruptions in this system. Transient voltage seeks the easiest path to ground. If your scale isn't grounded through a ground rod connection, it surely is grounded through other components. Disrupting the ground connection shunts power surges to other places, like your load cells or electronics. Damaged electronics will cost you thousands in repairs.

Monitor Your Scale's Use

You probably don't have the time to monitor how fast traffic enters and exits the scale. However, keep in mind that while the scale is designed to slightly move with traffic, abusive and aggressive entrance and exiting of traffic accelerates wear. Again, taxing the scale means more wear and more dollars spent in repairs.

Many scale manufacturers offer accessories to promote traffic discipline while entering and exiting your scale. Traffic signals and guide post kits at the

approach and exit can manage traffic flow and truck speed very effectively for a small investment.

Install Accessories Where Necessary

Consider the accessories below, developed from real-world experience, to prevent issues with your truck scale altogether:

- *Riser plates*: Be very wary of low-profile scales. Reducing the clearance under the scale gets you two things: 1) It takes less debris accumulation to impact the accuracy of a low-profile scale. 2) It makes cleaning your scale much more difficult as the underside is impossible to reach.² Riser plates elevate your weighbridge, reducing the risk of debris accumulation and providing clearance for cleaning and inspection.
- *Load cell boots*: Exposed to debris, weather, moisture and even product that has migrated below the deck, your load cells operate in the worst environment possible. Load cell boots act like a protective glove and prevent debris from interfering with proper load cell operation.
- *Steel and EPDM rubber belting*: At each end of your scale, there is a small gap between the scale and foundation. This gap is a great place for dirt, debris and product to fall under the scale and accumulate. Installing T-belting along this gap between the scale and foundation wall is a good step to preventing this accumulation (see Figure 4).

Analog Versus Digital Scales

Now you may be thinking: "These steps sound great, but I just don't have the time for my scale to be out of service six times a year." This is entirely understandable. To keep your inspections frequent without losing too much business to downtime, consider switching to a digital scale. Let's say a typical scale has eight to 10 load cells. If it's an analog setup, it could take four to six hours—the bulk of a day—to get your scale calibrated correctly. Whereas with a digital system, we can see the performance of each individual load cell on the instrument screen. With that ease of access, you're talking minutes to half an hour for recalibration.³ In the end, how you implement these best practices is up to you. You can partner with a qualified service provider to manage these tasks, or you can go it alone. One thing is certain—neglecting your scale costs you profit. | **WA**

Mike Wilkinson is the Heavy Capacity Product Manager for Fairbanks Scales (Kansas City, MO). For more information on Fairbanks Scales, contact Ingrid Adel at (816) 448-4288 or e-mail iadel@fairbanks.com.

**See Fairbanks Scales at the Waste Expo, Booth #2127.*

Notes

1. Mike Wilkinson, Product Manager at Fairbanks Scales.
2. Ibid.
3. Ibid.

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MAXIMUM LOADING LEVEL

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- Spiral Notebooks
- File Folders
- Magazines
- Newspapers
- Office Paper
- Phone Books

WS912122

RECYCLE HERE

WS912133

NO GARBAGE

RECYCLABLE ITEMS ONLY

Caution, Notice, & Danger Decals Size: 5 X 7" Price: .38 each

WDCAU101 CAUTION DO NOT PLAY IN, ON OR AROUND OR OCCUPY THIS CONTAINER FOR ANY PURPOSE	WDCAU106 CAUTION KEEP HANDS CLEAR OF THE HOPPER	WDCAU111 CAUTION KEEP OUT	WDCAU114 CAUTION THIS COMPACTOR STARTS AUTOMATICALLY	WDCAU115 CAUTION BEFORE OPENING DOOR TURN CONTROL PANEL KEY SWITCH TO OFF POSITION, REMOVE KEY AND BLOCK OFF TRASH CHUTE	WDCAU116 CAUTION THIS BALER STARTS AUTOMATICALLY	WDCAU122 CAUTION DO NOT PLAY IN OR AROUND
WDDAN103 DANGER STAND CLEAR WHEN TAILGATE IS OPEN	WDDAN102 DANGER STAND CLEAR WHEN CONTAINER IS OFF GROUND	WDDAN104 DANGER FREQUENT STOPS AND BACKING	WDDAN105 DANGER DO NOT ENTER	WDDAN107 DANGER DO NOT PARK IN FRONT OF THIS CONTAINER	WDDAN112 DANGER STAND CLEAR WHEN REAR DOORS ARE OPENED	WDDAN115 DANGER 220 VOLTS
WNOT101 NOTICE DO NOT FILL ABOVE TOP OF CONTAINER	WNOT109 NOTICE NO RECYCLABLES ALLOWED	WNOT103 NOTICE CONTAINER MUST BE PLACED ON HARD, LEVEL SURFACE LOAD UNIFORMLY	WNOT112 NOTICE IT IS AGAINST THE LAW TO PUT HAZARDOUS OR TOXIC WASTE IN THIS CONTAINER	WNOT113 NOTICE ALL TRASH MUST BE PUT IN THE CONTAINER	WNOT106 NOTICE PLEASE CLOSE COVERS	WNOT116 NOTICE NOT FOR PUBLIC USE VIOLATORS WILL BE PROSECUTED

Recycling Message Decals Size: 3 X 18" Price: .49 each

WD318107 ALUMINUM CANS ONLY	WD318117 CANS, PLASTICS & BOTTLES ONLY	WD318118 CARDBOARD ONLY	WD318131 FLATTEN BOXES
WD318132 GARBAGE ONLY	WD318133 GLASS ONLY	WD318134 GLASS, PLASTIC, ALUMINUM	WD318140 MIXED PAPER ONLY
WD318150 PAPER ONLY	WD318159 PLASTICS ONLY	WD318160 RECYCLE	WD318165 TRASH ONLY



The Distracted Driver Law: What Does it Mean to You?

Jack Dovey

Although, the Federal Distracted Driving Law FMCSA 35-11 has now been a Federal law for more than a year, THERE ARE STILL MANY QUESTIONS AS TO HOW TO BECOME COMPLIANT.

THE FEDERAL DISTRACTED DRIVING LAW FMCSA 35-11 has been in place now for 14 months. The law affects everyone in the waste hauling industry. It is very clear as to what the penalties are and what is allowed and not allowed. What has been lacking is the understanding of how the law will be enforced. What we saw in the later part of 2012 and the beginning of 2013 is a real effort to begin aggressively enforcing the distracted driving laws. This year, it would be prudent for all companies to have a manageable solution in place that allows them to communicate and be compliant with the Federal Distracted Driving Law.

How many accidents occur each year due to distracted driving? From 2008 to 2011, according to Department of Transportation reports, the following fatalities and accidents have been attributed to distracted driving:

Year	Fatalities	Injuries
2008	5,838	466,000
2009	5,474	448,000
2010	3,267	416,000
2011	3,331	387,000

What exactly is the Distracted Driving Law and what is involved? When did it go into effect? The

federal Distracted Driving Law became a nationwide law on January 4, 2012. It bans the use of a wireless telephone in a commercial vehicle that: *Requires a Commercial Driver's License (CDL) to operate, or weighs more than 10,001 lbs, or is designed to transport eight or more people for compensation, or is designed to transport 15 or more people not for compensation, transports any quantity of hazardous materials requiring a placard to be displayed on the vehicle or is a school bus.*

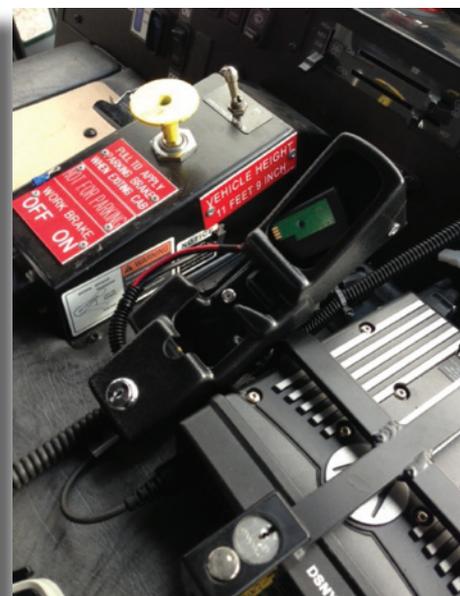
According to www.Distracted.gov, the Federal Motor Carrier Safety Administration (FMCSA) originally banned commercial truck and bus drivers from texting while driving in September 2010, and later banned all hand-held cell phone use by commercial drivers in November 2011. The Distracted Driving Law is a Federal ban for commercial vehicles that fall under the above criteria and covers both texting and talking on a wireless telephone while driving and the wireless device is in the user's hand.

Individual States also have bans that not only cover the commercial vehicles, but also cars and light trucks. In States that do not have their own bans yet, commercial vehicles are subject only to the Federal Distracted Driving Law. In States that have bans of their own, the companies are subject to both the State and the Federal laws. In a State that has enacted a Distracted Driving Law, the local enforcement could give a local ticket and a Federal ticket at the same time. The local agencies are supposed to be able to keep the fine and the local jurisdiction without a Distracted Driving Law can give the ticket if they cite the Federal law.

How is a ticket given if there is a violation? Who enforces the law? The ticket can be given indirectly by a local enforcement agency if it is given in one of the 10 states that currently have wireless telephone laws on the books. The ticket will get reported to the Federal DOT when regular fleet inspections are made. The tickets can be issued on the in-State highway system by the state patrols or other federal agencies authorized to enforce the law. There are currently two enforcement tests being conducted in Delaware and California. The test is being funded by the Federal Department of Transportation. The entire state of Delaware is participating and 38 police jurisdictions in California. The test was also done in Harford, CT and Syracuse, NY in 2012. The tests were funded with 2.4 million dollars. There were 2,923 citations given out in California, 1,830 given out in Delaware. The enforcement projects were conducted between November 30 and December 9, 2012. There are going to be additional enforcement emphasis in March and April of 2013.



Commercial holder in New York City dump truck.



Open-faced commercial phone holder in New York City garbage truck.

Photos courtesy of Robert DeStefano.

The tickets for drivers of commercial vehicles can be up to \$ 2,750 per violation and the employer can be fined up to \$11,000 per incident.

How do the ticket fines progress? Direct tickets can be given while the driver is seen using the telephone. One State has hired 26 new officers to specifically patrol the highways for offenders. Also, if a ticket is issued by a local jurisdiction or a State officer, it will be logged into a national database and eventually the federal tickets will show up for the employers and the violators. In addition, when the State and Federal inspectors come to inspect fleets for safety checkups, which will include reviewing the company's databases for safety, the violations will be ticketed. The law says that a repeat violator will actually get jail time and lose their CDL.

How does the Distracted Driver law affect waste haulers? What changes do organizations have to make internally to meet these rules? The only exempt parties from the laws are Federal, State or local governments. Waste haulers are not exempt. Waste haulers that are located in one of the 10 States that currently ban wireless telephones need to be aware that if they get a local ticket, the Federal ticket will eventually follow. Local jurisdictions can give the Federal ticket. The law holds the employer responsible for the action of the employee regardless if the telephone that may get used is a company telephone or a personal telephone. A company is responsible for the action of the employee even if there is a company rule that bans the use of a wireless telephone while the vehicle is in motion. There are only two ways to not be in violation of the law: the telephone needs to be physically locked in place in the vehicles and cannot be held in an employee's hand, or never have an employee hold a telephone while the vehicle is moving.

What types of tools are available to help waste haulers keep their drivers in compliance with the law? The Distracted Driving Law specifically says that a wireless telephone can only be used if it is secured to the dash in such a way that the driver can be seated in their seat with their seatbelt on and can use the wireless device by pushing one button or using a microphone like a citizen band radio. There are tools that do make the wireless handset compliant. A waste hauler could install permanent hands-free phone units in the vehicles, they could install a commercial grade locking cradle to hold the telephone or they could add a potato (handheld) microphone to the wireless telephone for use while it is locked into a commercial grade cradle.

Although, the Federal Distracted Driving Law FMCSA 35-11 has now been a Federal law for more than a year, there are still many questions as to how to become compliant. Some may say the simple answer is to no longer use a wireless telephone while conducting business during the day. For those running the day-to-day business this probably is not the best answer. The real answer is to understand the law and take advantage of the innovative devices now available that make a company compliant with the law and at the same time keeps the operation efficient and safe. | **WA**

Jack Dovey is Marketing Manager at GPS Lockbox (Las Vegas, NV). He has been part of the wireless industry since 1984,

working with the major carriers, phone manufactures and software companies to assist their customers to be compliant with the Federal Distracted driving laws. GPS Lockbox is a pioneer in developing state-of-the-art commercial grade mounting and communication devices. Jack was an elected official for 16 years in the State of Washington and brings a good understanding of how the laws work and get enforced. He can be reached at (206) 730-2612 or via e-mail at jdovey@gpslockbox.com.

**The Distracted Driving Law in its entirety can be viewed at www.distracted.gov.*

**See Jack Dovey in the Sprint Booth at the Waste Expo, Booth #4257.*



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Reinforcing Safety with an Electronic Message Board Program

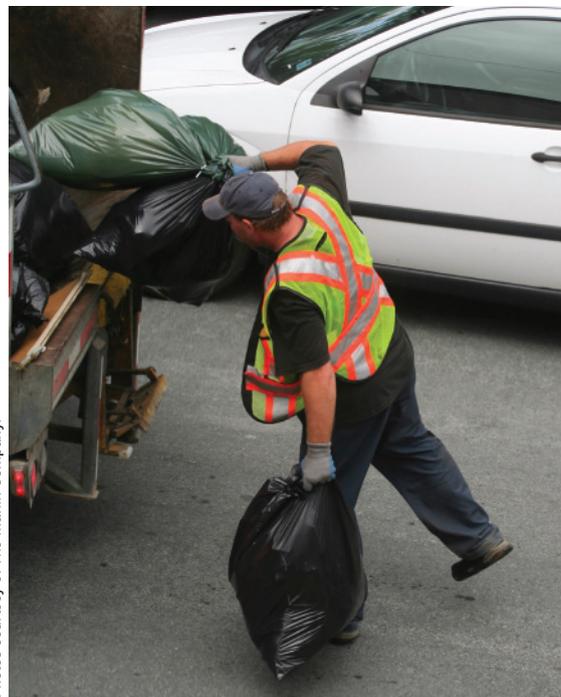
Jude Carter

BEST PRACTICES FOR WORKER COMMUNICATIONS in the sanitation industry.

SANITATION WORKERS CONSISTENTLY MAKE IT ONTO

the list of the top 10 most dangerous occupations as tracked by The Bureau of Labor Statistics. It's no wonder since they are often working in the dark, carrying heavy loads, working in traffic, handling hazardous materials, maneuvering large trucks in tight spaces and battling fatigue. Communication is a key factor in reinforcing safe behavior, yet reaching workers can be challenging when they spend most of their time on the road.

Increasingly, solid waste companies are installing electronic message boards at their facilities as a way to improve communication. The need for a mobile communications option is also becoming critical with the rapid growth of smart phone and tablet use. Most companies underestimate what's involved in developing an effective program. There are three components to a successful deployment: identifying your business goals, developing a content strategy and sourcing the right technology for your unique needs.



Photos courtesy of The Marlin Company.

Pictures like this reinforce safety precautions such as wearing safety gear and reflective clothing and being mindful of vehicles entering the danger zone.

#1: Your Business Objectives Define the Framework

Before you start thinking about screens, media players and network options, you need to get clear on your business objectives. Screens are merely tools to deliver your messages to employees. Think of your digital signage system as a way to market your messages to your workers in a way that will influence their behavior. So ask yourself, what are you trying to change, improve or measure? In the sanitation industry, making safety top of mind for everyone is the most common objective. Using electronic message boards that display colorful, dynamic content is a great way to grab your workers' attention

and influence their behavior. Other objectives might include employee recognition, reducing turnover, improving health and wellness or customer service, reaching workers on all shifts, reducing print communication and delivering consistent messages to everyone.

Consider Your Audience

If safety is your primary focus and you are targeting drivers and crew members, you face some unique challenges:

- Most of their time is spent on the road.
- They're in the drivers' room or breakroom for only a few minutes each day.
- At the beginning and end of each shift, they're likely to be in a rush, distracted or tired.
- A large percentage of sanitation workers are Spanish-speaking.

#2: Content Strategy Made Simple

Content can make or break your digital communication program. With a little bit of advance planning you can ensure that you have both the quality and quantity of content required for a robust program that will engage your employees. Given your target audience, what do your workers need to know? Once you've answered that you can incorporate these proven best practices.

Best Practices for Creating Effective Content

Keep it Visual

The advertising industry has proven that visual communication is a powerful technique for influencing our behavior. Use photos, video or cartoons to engage employees and give your message sticking power. Keep your messages short. Think headline and sub-head.

Make it Personal

Your workers will focus on what's important to them. Recognition is a universal motivator. Use your electronic message boards to celebrate achievement. Whether it's recognizing individuals or departments for achieving company goals, acknowledging milestones, anniversaries and birthdays, or welcoming new employees, everyone is sure to notice.



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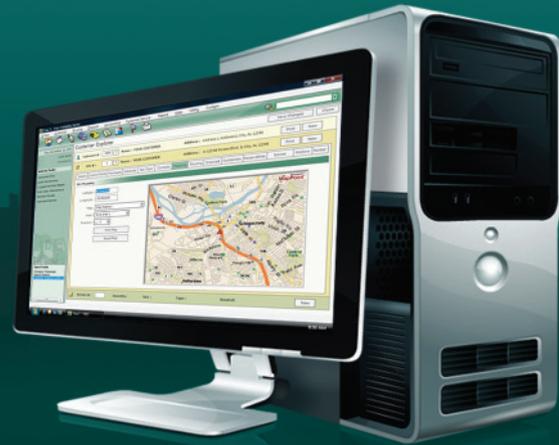
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Mix it Up

Serving up a steady diet of safety messages is a sure way to lose your readers. Even though you can add great graphics to illustrate critical safety measures, such as fall protection, wearing PPE and safe backing, you'll need to mix it up with universal topics such as health and wellness, teamwork, morale and inspirational quotes. Consider posting some content in Spanish to increase engagement with Latino workers.

Get Them Involved

Increase employee engagement by asking for feedback. Create virtual suggestion boxes, quizzes and games posted on PowerPoint slides with a QR code added. Employees can use their smart phones to scan the code and e-mail their answers and suggestions.

Avoid "Blank Screen Syndrome"

If your screens are running 24/7, you'll need plenty of content. In order for your messages to sink in, employees need to see them between four and five times. If the same messages cycle through for weeks at a time, (or even worse, if your screens are blank) employees will ignore them. Plan on adding some fresh content twice a week at a minimum. (And don't forget to remove the older content.)

Don't Go it Alone

Enlist other subject matter experts to contribute content. By including messages from the CEO, corporate communications, operations or HR, your electronic boards become a central hub of communication for the whole



Dick's Sanitation in Lakeville, MN uses electronic message boards to display safety recordables, post weather alerts and motivational messages.

company. Invite drivers and crew to submit photos from the road that can help to illustrate safety dos and don'ts.

Bring Your Metrics to Life

No more manual updates to whiteboards for days without accidents. Post your metrics on your screens. Use automatic counters to display the daily count. By creating simple, colorful charts for performance metrics, everyone stays informed.

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Reinforcing Safety with an Electronic Message Board Program

Have Some Fun

To make sure that workers are reading your critical safety messages, mix in some light-hearted content. Pictures of the company picnic, local sports trivia, high school yearbook photos—all of these act as a magnet to draw attention to your more serious messages.

#3: How to Choose a System That's Right for You

Now that you're clear on your objectives, audience and content strategy, you can make an informed decision on the technology solution that best fits your needs. You'll need to consult with your IT staff to determine which network configuration will work in your environment. Most companies do not have the resources or expertise for a homegrown solution, so they look to the outside for a digital signage provider to partner with. Here's what you'll need to consider:

- *Ease of use:* Content management software is a key component to any digital signage program. It enables you to create, post and schedule content, and manage user permissions. You'll want to know that an administrative-level employee can post content easily and quickly, and that it does not require someone with advanced design or technical skills. Ask for a demo.

- *Content:* By now you understand that this is a critical piece of the puzzle. Find out whether the digital signage provider delivers any content on workplace topics or offers design or editorial services for content creation. You may need this to supplement your efforts, and you'll want to know how it is priced.

- *Reach:* If you require an enterprise solution, be sure to find out how you will be able to manage users and permissions for content creation. From a hardware point of view, if you have many screens playing the same content, explore cost-saving approaches. The best of today's systems incorporate software that adapts for mobile communications as well, fast becoming an essential for contacting your on-the-road team.

- *Support:* Internal stakeholder commitment and involvement will help you determine how much outside support you will need. Does your potential partner offer a turnkey solution if needed? Is technical support and training readily available, and is it included in the price?

- *Security:* Before you go shopping for a partner, be sure to understand your internal security requirements. They will determine whether a wireless, SaaS or internal server-based model will be best for you. That, in turn, will narrow the field of possible providers and help you project costs.

- *Price:* Pricing models vary widely, from turnkey solutions that include hardware, software and licensing fees to a la carte offerings and subscription-based models. Most digital signage products are sold through reseller networks. Within any given network, there are sources for screens, media players, software, consultative services, design and content support. Find out how these services are priced. Beware of hidden costs that may be layered in after the initial purchase.

By following these guidelines you'll have a dynamic communications platform that aligns with your company goals, engages your employees, and keeps them informed and motivated. | **WA**

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A Review of the Rail Industry And Its Impact on Waste Transportation

Darell Luther

A review of the rail industry, THE COMMODITIES IT TRANSPORTS AND THE IMPACTS ON WASTE AND SCRAP.

THE RAILROAD INDUSTRY IN THE U.S., CANADA AND MEXICO is comprised of an extensive network of track and infrastructure that runs from the Hudson Bay in the north to the Gulf of Mexico in the south and from the Pacific Ocean to the Atlantic Ocean.

There are five Class I Railroads in the U.S., two in Canada and two in Mexico. A Class I railroad is defined as having annual operating revenue of \$433.2 million or more. These railroads in 2012 transported a cumulative 14,375,325 carloads across 20 carload category groups (see Table 1).

An additional 6,718,522 originated carloads were generated in 2012 by a cumulative 423 U.S. and Canadian Short Line and Regional Railroads. Short Line Railroads are defined as having annual revenues of \$34.7 million or less and Regional Railroads annual revenue ranges from \$34.7 million to \$433.2 million.

It is often stated that Regional and Short Line Railroads are the veins of the rail transport system gathering and

distributing freight from and to customers while the Class I Railroads are the arteries transporting freight across longer distances (see Table 2, page 32).

Table 1

2012 Carloads Originated	
US Class I Railroads	14,375,325
CSX Transportation	2,826,857
Norfolk Southern	2,657,456
BNSF Railway	4,405,836
Kansas City Southern	292,368
Union Pacific	4,192,808
Canadian Class I Railroads	4,009,097
Canadian National	2,669,013
Canadian Pacific	1,340,084
Mexican Railroads	749,024
Ferrocarril Mexican S.A. de C.V.	506,797
Kansas City Southern de Mexico	242,227

*Tables courtesy of the Association of American Railroads.



Stored waste container flats.
Photos courtesy of Tealinc.

Rail Carload Categories



ASSOCIATION OF
AMERICAN RAILROADS

Carload	Category	Description
1.	Grain	Primarily corn, wheat and soybeans, but also includes oats, barley, rye, sorghum, etc.
2.	Farm Products Excluding Grain	Primarily fresh fruits and vegetables
3.	Metallic Ores	Overwhelmingly iron ore, but some aluminum ore, copper ore, etc.
4.	Coal	Coal
5.	Crushed Stone, Sand & Gravel	Crushed or broken stone, sand, aggregate, gravel
6.	Nonmetallic Minerals	Phosphate rock, rock salt, crude sulphur, clay, etc.
7.	Grain Mill Products	Soybean meal, corn syrup, animal feed, flour, corn starch, milled rice, etc.
8.	Food Products	Canned goods, meat and animal products, sugar, beverages, seed and vegetable oils, etc.
9.	Primary Forest Products	Wood raw materials such as pulpwood and wood chips
10.	Lumber & Wood	Lumber and dimension stock, plywood, etc.; does not include furniture
11.	Pulp & Paper	Paperboard, pulpboard, fiberboard, printing paper, pulp, newsprint, boxes, industrial paper, etc.
12.	Chemicals	Industrial chemicals, plastic resins, fertilizer, ethanol, hazardous materials, etc.
13.	Petroleum Products	Products of petroleum refining such as liquefied gases, jet fuel, fuel oil, lubricating oils, asphalt tars, etc.
14.	Stone, Clay & Glass Products	Ground nonmetallic minerals or earths, cement, lime, gypsum products, glass products, bricks and other clay products, abrasives, etc.
15.	Coke	Petroleum coke, coke produced from coal, and coal or coke briquettes
16.	Primary Metal Products	Primarily iron and steel products; some aluminum, copper, etc.
17.	Motor Vehicles & Parts	Finished vehicles, parts, auto and truck bodies, etc.
18.	Iron and Steel Scrap	Iron and steel scrap
19.	Waste & Scrap	Non-ferrous scrap metal, scrap paper, construction debris, ashes, etc.
20.	All Other Carloads	Commodities not included in any of the above categories



TOFC/COFC railcars.

Rail carloads originated in the U.S. by commodity for these 20 groups reflect the health of each of these sectors. For instance, some of the more heavily shipped products such as grain and coal, which according to the American Association of Railroads when combined together typically accounts for half of all U.S. rail carloadings, were down 9.5 percent and 10.8 percent respectively in 2012 when compared to 2011. Other groups such as aggregates (up 7.9 percent), lumber (up 13 percent), autos (up 16.5 percent) and petroleum (up 46.3 percent) indicate some boom and underlying strength to economic indicators that should translate downstream into stronger waste and scrap numbers.

Waste and scrap numbers continue to post declines of 5.5 percent year over year from 2011 to 2012. The waste and scrap commodity grouping rail carload numbers are generally indicative of the overall long-term health of the economy. With fewer jobs, fewer owner-occupied houses and less general office leasing and building occurring, the downstream result is less waste generated. A reduced amount of waste generation can usually be absorbed by more local truck based landfills and doesn't require longer rail hauls to support the volumes of waste and scrap being generated, hence the reduction in waste and scrap rail carloadings. A review of historical scrap data (see Table 3) indicates a steady 2008 and decline thereafter with small periods of recovery, but no solid strength as of yet in the overall economic stability of the U.S.

What Impact Does This Have on the Waste and Scrap Shipper?

There's a number of phenomenon that are occurring in the rail industry that may reflect positively and even create an opportunity for entry for the waste-by-rail and scrap-by-rail shipper.

Increased Rail Velocity

Long, slow and heavy coal and grain trains often take more human and locomotive resources. Pulling a train of 135 coal railcars across the country equates to around 19,000 trailing tons. You simply don't go anywhere fast with that type of tonnage. The decreases in the coal business that can oftentimes take up to five heavy-duty six-axle locomotives equates to a few thousand surplus locomotives. In addition, the reduction in slower trains being replaced by faster trains also reduces the number of train crew that are required, hence, freeing up human resources to pull other trains.

Underused Capital Investments

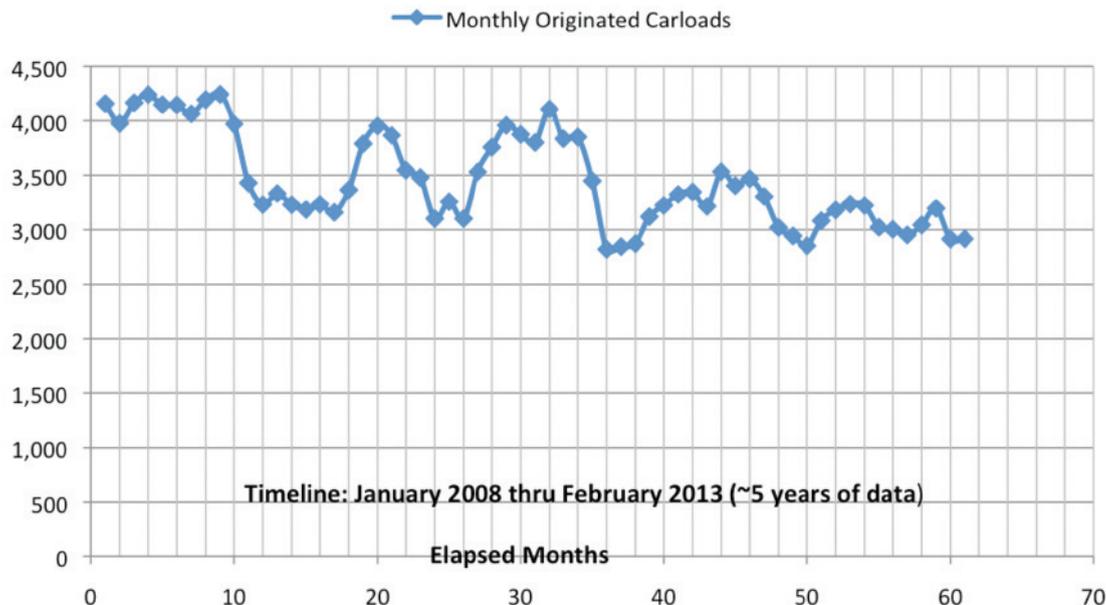
The number one investment for a railroad is track. If a track isn't being fully used due to the lack of heavy haul traffic (grain and coal) there is more of an incentive to offer competitive rail rates to other commodity shippers that can use that space. Particularly for long haul shippers such as the movement of municipal solid waste from municipalities to alternative landfills.

Availability of Idle Assets

In direct correlation with the locomotives that railroads have set in storage due to lower traffic volumes, shippers and railroads alike have parked railcars typically designed to handle these commodities in storage. A bleak forecast for market improvement within the near

Table 3

Monthly Originated Rail Carloads - Waste & Nonferrous Scrap



future may afford waste-by-rail shippers to lease and purchase rail equipment at lower market rates.

More Willingness to Work with Alternative Rail Shipments

Face it; waste-by-rail isn't glamorous nor particularly repetitious when compared to large volume bulk commodities. It always seems to take a tweak to make it flow smoothly be it a requirement for odor control, covers, special packaging or baling, management of potential contamination or hazards, etc. There seems to be no rote in rail transportation of waste; however, with the significant increase in the petroleum business, railroads are putting more efforts into standardizing management of potentially hazardous or contaminating commodities that make the movement of waste-by-rail more acceptable to railroads.

Silver Lining

Despite the flatness of the overall economy, there are several silver linings for those that want to transport waste-by-rail. The impact and significant losses in major business lines for the rail carriers and their willingness to be more receptive to waste-by-rail both bode well for waste shippers. The data we've presented here coupled with the work we did for Idaho Waste Systems, Inc. (see *Waste Advantage Magazine*: January, February, March 2013) supports our optimistic outlook for the shipment of waste-by-rail. | **WA**

Darell Luthber is president of Forsyth, MT-based Tealinc Ltd., a rail transportation solutions and railcar leasing company. Darell's career includes positions as president of DTE Rail and DTE Transportation Services Inc., Fieldston Transportation Services LLC, managing director of coal and unit trains for Southern Pacific Railroad and directors positions in marketing, fleet management and integrated network management at Burlington Northern Railroad. Darell has more than 24 years of rail, truck, barge and vessel transportation experience concentrated in bulk commodity and containerized shipments. He has received many exploratory calls inquiring how to ship various waste streams by rail and would welcome your inquiry as well. Darell can be reached at (406) 347-5237, via e-mail at darell@tealinc.com or visit www.tealinc.com.

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Recycling Program Gets Even Greener for the City of Seymour

Not only does the City of Seymour's RunWise truck save fuel and labor, but it is also **CLEANER FOR THE ENVIRONMENT.**

FOR THE CITY OF SEYMOUR, IN, "GOING GREEN" WAS AN easy decision. The City offers its roughly 20,000 residents a free recycling program that provides curbside pickup of unsorted recyclable materials. To help pay for the program, residents' recyclable trash is sorted through a local company, and items of value, such as scrap paper or aluminum cans, are sold.

Fuel Expenses

Despite help from the sale of valuable recyclables, the City's budget remained tight. It would be difficult to maintain the free recycling program due to the fuel it was taking to run the routes. The City of Seymour needed an alternative that would save money in fuel and decrease the cost of labor associated with running the weekly routes in order to continue offering a free recycling program to the community. "For the recycling program, we were running three quarter-ton pickup trucks with trailers," said Dick Wilde, Director of the Public Works Department for the City of Seymour. "For those three trucks, we had six employees who would drive the routes. These trucks were only getting about 1.3 miles per gallon. Combined with the cost of labor, it was expensive to keep up."

For the Public Works Department, saving money in fuel

and labor costs became the ultimate priority. The answer for the City of Seymour came when the Greater Indiana Clean Cities Coalition received a call from Stoops Freightliner, a distributor of Autocar, LLC—a green leader in severe duty truck manufacturing. Autocar could provide a refuse truck that featured a hybrid hydraulic transmission that would provide dramatic fuel savings when put into routes in the City.

The Hybrid Drive System

Parker Hannifin (Cleveland, OH), a global leader in motion and control technologies, developed RunWise, an advanced series hybrid drive system. The system significantly reduces fuel consumption and operates efficiently for urban routes during refuse collection. By combining hydraulic components, advanced control software and brake energy recovery technology, more than 70 percent of a vehicle's otherwise lost braking energy is recovered. This stored energy is reused—saving fuel—to power the truck during collection routes.

The major subsystem of the Parker RunWise system is a power drive unit (PDU) containing three gears, equipped with two drive modes: mechanical and hydraulic. The mechanical mode is used for highway efficiency. When in



The City of Seymour's RunWise truck.
Photo courtesy of Parker Hannifin.

hydraulic mode, the PDU operates with the hydraulic fluid supplied through the secondary pump/motor to drive the truck in hydraulic low and hydraulic high. The secondary pump/motor receives the hydraulic fluid from the high pressure accumulators. The system always monitors the accumulator's state of charge to ensure optimum performance. The truck operates in hydraulic low function from 0 to 25 mph and hydraulic high function from 26 to 44 mph.

"When I heard about RunWise, I knew it was the perfect fit for Seymour," said Kellie Walsh, Executive Director of the Greater Indiana Clean Cities Coalition. "The City was using trucks with wagon trailers to run the routes, and spending a lot of money on fuel and labor. The RunWise truck would be better looking, less expensive and quieter. It would reduce fuel costs so much that the City could keep the program free."

Increased Productivity, Less Fuel Consumption

With the help of the coalition, the City received a grant from the Indiana Office of Energy Development and the State's American Recovery & Reinvestment Act fund. Right now, the City's RunWise truck is running a regular trash route and will be used in the recycling program. "I wish I had two more RunWise trucks," said Wilde. "With the old trucks, it would take about seven hours and six people to run about 700 stops. With RunWise, it only takes six hours and one person. And it's a smoother ride for the driver overall." In addition to increased productivity, the City's hybrid refuse truck is consuming on average 52 percent less diesel fuel than a non-hybrid (2.5 miles/gallon versus 1.3 miles/gallon). Wilde expects that this will increase when the hybrid truck is fully implemented into the recycling program.

"We needed to save money in fuel, especially with the way gas prices are increasing," said City of Seymour Mayor, Craig Luedeman. "Getting this truck allowed us to answer that need. In some cases, we have experienced 60 percent fuel savings when the truck is running a route. This is 10 percent more than the average Parker projected. We are also saving significant money in workman's compensation. Everything is going great."

In addition to fuel savings and labor, one RunWise truck operating its route for just one year lowers CO₂ emissions by as much as 48 tons¹, the equivalent of the carbon sequestered by a 10-year-old stand of 1,121 trees². "The environmental benefits were important because the truck is not only saving fuel and manpower, but it's also cleaner for the environment," said Wilde. "That is very important to our community. We worked very hard to let the community know that this will be better for our City in more ways than one."

With increased fuel savings and a significant increase in efficiency for the City's refuse and recycling program, Wilde expects that his department can justify purchasing two additional trucks to replace the automated conventional diesel trucks that run the regular trash routes in his city. "As our other trucks get older, those will probably be replaced with RunWise," said Wilde. "It just makes sense. According to how well our RunWise truck is doing, I think we'll be able to use it for 14 to 16 years. I think that's definitely reasonable." | **WA**

For more information on the Parker's RunWise technology, visit <http://parkerhybrid.parker.com>.

Notes

1. EPA figures.
2. U.S. Environmental Protection Agency Greenhouse Gas Equivalencies Calculator.

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Breakthroughs and Innovations



Trash receptacles require a properly secured cover in order to prevent spillage from occurring during transport. A tarpaulin cover fastened by bungee cords is subject to weather damage resulting in tears and weakening its overall durability. Monthly repairs are mandated by its inability to sustain the elements. Employees have reported injuries from the bungee cords snapping in attempts to secure the cover properly. Its loose configuration on the receptacle allows infectious waste to fall from the vehicle during transit harming the environment and general public.

DNALERI INDUSTRIES (aka **MID ATLANTIC CAN SERVICES, INC.** (Pittsburgh, PA) offers a solution to this ongoing problem: the Rigid Plastic Cover (RPC), a lightweight, durable and maintenance-free cover for receiver compactor containers. The 55" x 72" plastic enclosure features two molded in-handles for easy handling and a 12" curvature for trash/recycling stick-out. The RPC sits in a channel track at the bottom of the receiver container's opening, held in place by two topstops. Then, it is secured in place with two ratchet straps that fit nicely into the grooves formed across the cover. Very user-friendly, the RPC fits on all receiver and roll-off compactor containers regardless of their make/manufacturer, making it interchangeable with other containers. The RPC hardware installation takes about a 1/2 hour and once the hardware is on, it only takes 60 seconds to put the RPC on.

Down the road you will experience no problems, injuries, citations or liabilities and no worries of failing while in transit. Some companies have received reduced insurance rates by using this new safety product. By reducing the litter that these containers normally lose from not being properly tarped and secured, the RPC has a huge positive impact on the environment. It conveniently, economically and safely deals with these issues while meeting or exceeding current and proposed regulations.

FOR MORE INFORMATION, CALL (724) 640-4257 OR VISIT WWW.MIDATLANTIC150.COM.



In recent years, contractors have found an ever-constant pressure to keep track-out from leaving jobsites and entering the roadways. Past methods included costly and time consuming methods using employees to pressure wash the vehicles prior to exiting the site and using road brooms to clean up after debris has already been dragged onto the road. In the early 1990s, **WHEELWASH** (Long Branch, NJ) recognized the inconveniences and expenses being incurred by contractors. With this, Wheelwash introduced the Wheelwash Bath. The Wheelwash Bath was designed for vehicles to drive onto a set of ramps, engineered to assist in knocking off mud and debris, into and through a bath of water rinsing the remaining debris from the treads. Wheelwash provided contractors with a

low maintenance solution to their track-out concerns.

Today, Wheelwash manufactures a complete line of wheel cleaning solutions, ranging from the basic Wheelwash Bath, to the automated Wheelwash Powerwash. Made In America, Wheelwash provides the rental, sales and service of vehicle cleaning solutions to prevent track-out from leaving jobsites and facilities. Wheelwash provides a full product line of wheel cleaning solutions to assist in preventing the pollution of the roadways and storm water systems. Options available include: mobile and permanent units, inset and surface mount units, closed-loop recycling system and tank heaters to prevent freezing.

FOR MORE INFORMATION, CALL (732) 403-8400 OR VISIT WWW.WHEELWASH.COM.

METTLER TOLEDO, LLC (Columbus, OH) has recently launched a new line of vehicle software called DataBridge. DataBridge products have been designed to meet the specific needs of customers ranging from the smallest one scale operations to large organizations with weighing needs spread across multiple facilities. Solid waste operations experience heavy traffic, which is why productivity and efficiency across the scales is so paramount. Furthermore, environmental regulations demand that operations have accurate records readily available for audits and timely reporting. By reducing the number of clicks required and simplifying the workflows, DataBridge can help complete transactions quickly to meet the demands of a busy facility. Mettler Toledo's unattended systems can delegate transaction processing to the drivers by providing them with step-by-step instructions that walk through the different weighing scenarios that they might face. These systems in turn can be connected to equipment that can capture these actions visually, so that they can be pulled up during audits, security, etc.

FOR MORE INFORMATION, CALL (800) 786-0038 OR VISIT [HTTP://US.MT.COM](http://US.MT.COM).



COMPASS MOLDED PRODUCTS (Riverside, CA) will debut its new 95-gallon waste receptacle at this year's Waste Expo, Booth #1721. This new product is conveniently made for both automatic and semi-automatic for easy collection as well as with



large comfortable handles for easy maneuverability. While Compass takes pride in being compliant with all ANSI standards, it keeps in mind its end user. With specific features like the innovative "no puddle" exterior lid design and rear foot rest for effortless cart tilting, Compass is thinking of the customer first. From the new injection-molded 95-gallon residential waste container, medical waste containers and the full line of plastic commercial waste containers, Compass Molded Products serves the customer directly and quickly.

FOR MORE INFORMATION, CALL (888) 959-6132 OR VISIT WWW.COMPASSMOLDEDPRODUCTS.COM

FAIRBANKS SCALES (Kansas City, MO), providing top quality industrial weighing equipment and services, announces their Driver Assist Terminal for material handling operations. Fairbanks Access Solutions offers the Driver Assist Terminal as a comprehensive vehicle identification and weighing system that can improve flow of traffic through the weigh station and increase efficiency at landfills, quarried, recycling plants, transfer stations, paper plants and other material handling operations. Beginning with the Access Entry Station, the advanced entry unit greets incoming drivers and vehicles with an audio and visual prompt. Its color screen and intuitive operation enable vehicle processing approximately every 30 seconds without an attendant as it fluidly integrates with the truck scales and flow meters to measure and weigh the amount of material being transferred. The Access Entry Station swiftly sends essential transaction information to the MatreX Processing System, a centralized processing system and database that can instantly provide the operator with important data. Additionally, this driver assist terminal can extend operating hours, reduce labor costs and potentially extend your customer base by processing credit cards while operating unattended. The Fairbanks Access Solutions Driver Assist Terminal is designed to integrate with and improve your current management system, and is ideal for operations looking to streamline and enhance their procedures.

FOR MORE INFORMATION, CALL (800) 451-4107 OR VISIT WWW.FAIRBANKS.COM.



WasteAdvantage^{magazine}

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 Recycling  Transfer Stations  Landfills

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Waste Advantage Magazine's Recycling/Transfer Stations/Landfills (R/T/L) section has become a very important part of our readership. Our timely, relevant editorial in this section—products/services releases, statistics, short tips, etc.—provides you, our R/T/L professionals, with the useful information that you need when making that important purchasing decision. By making this important move, *Waste Advantage Magazine*, provides something for everyone in the waste and recycling industry and makes it the most complete one-stop-shop publication available today. We look forward to expanding our coverage of this segment of the industry and hearing your feedback.

Landfills

Features of an Effective Landfill Cover

Jeff Pankonie

WHEN CHOOSING AN EFFECTIVE LANDFILL COVER OR CAP, MANY FACTORS

must be taken into account. Since the cap functions to shelter the environment from waste, durability is paramount. Covers must be able to withstand UV exposure, ozone, soil bacteria, potential animal traffic and extreme temperatures over time without cracking and requiring little or no maintenance. Whether ethylene propylene diene monomer (EPDM) or thermoplastic-based, tensile strength, flexibility, conformance and lay flat characteristics contribute to the longevity of a landfill cap. Covers also must be placed on tightly to prevent methane gas from leaking.

Installation

Ease of field installation affects labor costs and installation time. A membrane that requires special tools for application and repair takes longer to install and requires more specialized labor that may increase project costs. Panels should come in a variety of sizes or be available to custom order to best fit the size and scope of a project. A single-source provider of membranes and accessories makes installation and warranties less complicated.

A Firestone EPDM geomembrane was chosen to cover the Stovall Landfill in Prescott, AR when the 11.5 acres capacity was reached. Requirements specified in Regulation 22 of the Arkansas Department of Pollution Control and Ecology, Solid Waste Management Division—which is consistent with the U.S. Environmental Protection Agency’s Resource Conservation and Recovery Act, Subtitle D—had to be considered when choosing a landfill cap.

Environmentally Friendly Materials

Consumers and/or municipalities often require “environmental friendly” or “green” materials with landfill covers. Plasticizer and chlorine-free thermoplastic geomembranes are now available. Both EPDM and thermoplastic liners should be classified as safe for fish and plant life and/or have the water purity mark from the National Sanitation Foundation (NSF). Recently, Tesson Road Municipal Solid Waste Landfill outside of San Antonio, TX became the first geomembrane cap to have flexible laminate photovoltaic cells mounted in order to produce additional energy. Installers should also consider the membrane cover’s thickness and possibly the color if you need to take landscape blending into account.

In order to make a final landfill cap decision, consulting with a geomembrane professional to address a site’s particular needs on a granular level with regards to specific codes and preferences is recommended. | **WA**

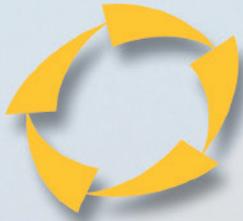
Jeff Pankonie has worked with Firestone Building Products (Indianapolis, IN) for 24 years, including the last nine years in the Specialty Products Division, focusing on Geomembrane. His current position is Manager, Building Envelope Solutions. He can be reached at pankoniejeff@firestonebp.com.

In considering extreme climate conditions, potential animal traffic and desiring decades of durability, the project manager choose thermoplastic polyolefin Geomembrane from Firestone. The landfill cover also serves as a mounting surface for flexible photovoltaic solar panels.

Photos courtesy of Firestone Building Products.



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Public Outreach

Getting the Community to Advocate for Your Company

Frank Rizzo

WE CROWDED AROUND A SMALL TABLE AT A LANDFILL'S OPERATION

center to discuss an ongoing problem. The neighbors were angry and had mobilized to fight a proposed expansion of the facility. The opposition had already caused costly delays and with a public hearing on the project just months away, the County Supervisors were being inundated with angry calls and e-mails against the proposal.

"Do we have supporters that can speak for us? Will they come to the hearing and make a public statement?" the landfill manager asked. An engineer spoke up with the same reply I have heard too many times, "It's easy for opponents to find people to come out against our proposal, but average people won't attend a public meeting to support a waste project."

The engineer was wrong. Yes, NIMBYs (Not-in-my-back-yard) and community opponents are often well-motivated to attend public meetings. However, your supporters can also be mobilized with a little hard work and

some creative grassroots organizing. The key is to let your supporters know they are not alone and that others in the community want the project to succeed.

Mobilizing Support

As a grassroots and public affairs specialist, I have spent years mobilizing support for political candidates and controversial land-use projects. I've learned that people on both sides of land-use issues care more about what happens in their local community than they do about electing politicians—and they come out to vote for politicians all the time. So, yes you can turn your supporters out to a public meeting—you just need to use the right approach and the most effective community engagement tools.

In the past, waste executives would counter community opposition by calling the local public relations professionals to generate a good news story. This might have worked at one time, but in today's Internet-driven world, the opposition can organize fast and quickly impact your plans. Innovative waste companies understand that community opposition is a political problem and they use grassroots campaigns to achieve their goals.

Public affairs professionals all have different definitions for "grassroots" when mobilizing community support. There are traditional grassroots, grasstops and even grasstips organizing, all with a different level of effectiveness for your project.

Grasstops and grasstips are the highly visible members of the community. For example, a local chamber of commerce or rotary club president, or the owner of a large local company, would be a grasstops supporter. However, many mistakenly believe that grasstops and grasstips support is all they really need to win their vote. In reality, politicians expect this group of usual suspects to support your efforts—getting their support is the minimum requirement—and it is often not enough to overcome the most contentious community opposition.

Identifying and mobilizing true grassroots support from citizens is far more effective and provides true political cover for politicians that want to support your goals. Elected officials take notice when one earnest citizen, who does not have a financial interest in the project, speaks on your behalf more than a legion of chamber presidents.

Campaign Tools

Back at our crowded conference table, we began to formulate our plan to identify and mobilize our supporters and to ensure the County Supervisors heard from them before the public hearing. We developed a hearing day plan, or Get-Out-The-Vote (GOTV) program, to get our supporters to the meeting and have them speak on our behalf.

We used the same campaign tools that political candidates use when they run for office. First we worked to educate the public by sending direct mail to

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Above, Pemberton® packer grapples on the job at The Roanoke Valley Resource Authority. Photo courtesy of DoMORE Magazine.

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residents closest to the landfill. We also used the county voter list to develop a political profile of those mostly likely to support the project. A phone bank was then used to identify supporters after the mail arrived. Our outreach team went to the homes of identified supporters to have them write letters of support. We even collected brief videos of supporters to be played at the hearing of people who could not attend the meeting or were too intimidated by the opposition.

Supporters of the landfill expansion were also called and then patched directly to individual Supervisors' offices to communicate a positive message. We held a telephone town hall, which is essentially a very large conference call where people learn about a project and ask questions. It's one of the best ways to communicate directly with people who are often too busy to come to a community meeting. During the call, people who supported the project were able to push a button on their phone and we were instantly able to capture their name and address, further growing our list of supporters.

We also conducted outreach to traditional stakeholders, abutters, businesses and local community leaders. The outreach staff provided the communications team with the names of people willing to write letters-to-the-editor or be quoted in the paper about the community benefits, all of which help counter negative news stories.

Preparing for the Hearing

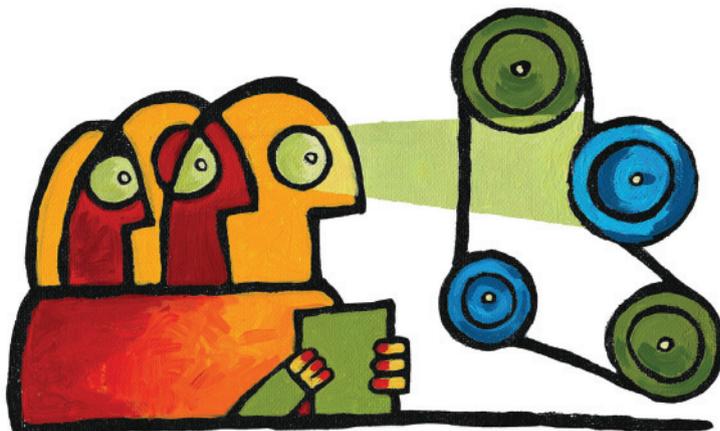
As the hearing approached, we planned to get our supporters to the hearing as if a politician were planning to get his or her voters to the polls on Election Day. Now, armed with more than 3,000 supporters, we called through our list the week before to remind them about the hearing and personally asked them to attend and speak. We sent them mail and even drove a few key speakers to the meeting ourselves.

The public hearing was contentious—but balanced. The Supervisors heard from supporters of the project about the importance of jobs and additional tax revenue for the county—the key factor being that they heard it from many voters. Due to a number of supportive e-mails, voicemail messages and people testifying in favor of the expansion, it was clear that the opposition group was just motivated by NIMBY issues. Most importantly, the Board had the political cover they needed to make a challenging vote and support the project.

Any waste executive can run one of these campaigns. Your supporters are out there. It just takes perseverance and the right tools to find and mobilize them. | **WA**

Frank Rizzo is Partner with Five Corners Strategies, a national grassroots public affairs firm that specializes in strategic communications, community engagement and corporate advocacy. He can be reached at (510) 378-2511 or via e-mail at rizzo@FiveCornersStrategies.com.

**See Frank Rizzo's presentation, "Dealing with the Media", at the Waste Expo 2013 on Monday, May 20, 2013 from 9:00 am – 10:15 am.*



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Recycling Effective Methods to Process Organic Waste

AS THE WORLD POPULATION INCREASES, THE WASTE PRODUCED BY municipals and food producers has become a huge challenge for waste industries around the world. There are millions of tons of food wastes and agricultural wastes every year—what we call “organic wastes”. As food production becomes more intensive, dealing with the dirty side becomes increasingly demanding and difficult.

There are a number of methods, traditional and technologically advanced, currently used to encounter those challenges in the industry. However, a new technology called rapid thermophilic digestion transforms a variety of biowastes into high quality organic fertilizer in just 24 hours.

Traditional Organic Waste

Organic wastes are materials that originate from plant and animal sources. If left unchecked, it can cause many bio-security issues such as greenhouse gases, foul odor, pathogens, contamination of groundwater and harboring disease vectors like pests. Currently, the most common method in treating organic waste is a process called composting. This traditional method dates back many centuries where

Top:
Fertilizer output from
Biomax digester.

Bottom:
Biomax digester.



Photos courtesy of Biomax.

farmers would leave organic wastes in the open to decompose slowly and naturally on their land. With modernized composting practices and equipment, it now takes months or even weeks for the process to be complete. This is dependent on the many factors such as the size, type and composition of the waste materials. Such organic waste materials consist of valuable nutrients that are good for soil and crops.

Another method that is technologically more advanced is biogas conversion. This technology produces biogas that can be used to generate electricity or power motor vehicles. This technology usually involves large-scale projects and requires huge capital investment. While it offers the benefits of producing valuable biogas, many systems can treat only a narrow optimal range of feedstock, which

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can also require greater additional pre-treatment. In addition, after the conversion process 'creams off' the organic waste, it produces a substrate by-product which needs to be treated or disposed of properly.

Rapid Thermophilic Digestion

Recently, a cutting-edge technology has broken into the waste management scene. Rapid thermophilic digestion can convert organic wastes into organic fertilizer in just 24 hours. This technology adopts the aerobic digestion system, meaning that the microorganisms inside the waste break down with the presence of oxygen from the atmosphere. The system comprises of two key components, proprietary enzymes and a digester in order to achieve an accelerated degradation process to break down complex organic compounds into simpler organic matter at an unprecedented speed. These proprietary enzymes consist of a variety of naturally occurring and non-competing bacteria.

The process for rapid thermophilic digestion is very simple. The waste materials are loaded into the enclosed digester and the enzymes (in powder form) are added at 1kg per ton of waste material. The temperature of the digester is maintained at 80°C to remove all harmful pathogens in the wastes while air is blown into the digester periodically by the air pumps, providing an optimal working environment for the enzymes. The enclosed process guarantees that there is no leakage of offensive smells or biomass, containing all nutrients within the materials and also removing the possibility of any bio-security issues usually encountered by the waste management industry regarding the handling of organic wastes. The only by-products coming out from the process are water vapor and carbon dioxide. After just 24 hours, all the waste materials are converted into top quality organic fertilizer.

Beneficial for Waste Managers

There is a very wide application of rapid thermophilic digestion for the waste managers to benefit from. The system deals with several types of organic wastes, including municipal wastes (e.g. food wastes, sewage sludge), crop wastes, food processing wastes and even animal slaughtering wastes such as discarded innards, unwanted fats and meats. Moreover, it could also be used to treat substrates released from biogas plants to convert into a more valuable product, providing a zero-waste solution for biogas operations. Waste managers will find that it is a very easy process. First, for a 50 ton input machine, only three to four workers are needed to load the input and unload the output after 24 hours, pack the fertilizer and for the cleaning. Second, not much space is required. For example, it only requires a maximum space of about 1,000 sqm to process 50 tons of waste per day. The space includes the processing, storage area and the raw material and cooling areas. Since the area where composting would usually take place is reduced, the waste facility can use the freed up space for other value added operations. Finally, the waste facilities can engage with landscapers and agricultural farms to supply the end product fertilizer.

An Alternative Solution

Accelerated aerobic degradation through the introduction of cultured microorganisms offers a genuine breakthrough in terms of rapidly treating organic wastes at the point of production. Rapid thermophilic digestion solves the problem of dealing with otherwise intractable wastes by injecting new life and value into it, thereby achieving a phenomenal Return on Investment (ROI) potential through its short processing time and quality end product. | **WA**

Biomax Technologies is a Singapore-based international company in the research and development of sustainable green technology, harnessing proprietary, breakthrough, environment-enhancing solutions while helping businesses use science and technology to achieve the greatest profitability for their investments. For more information, e-mail enquiry@biomaxtech.com or visit www.biomaxtech.com.

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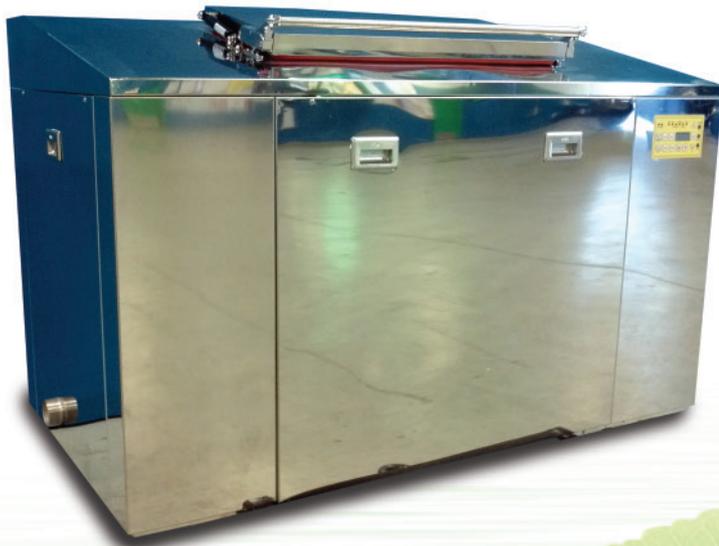
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For the Future: Rainbow Environmental Services Aims for Zero Waste with CP Group and Siemens

CHASE CLARK WANTS TO BE A RECYCLER WITH RAINBOW ENVIRONMENTAL

Services when he grows up. The three-year-old boy loves nothing more than watching the collection trucks roll out of Rainbow's Huntington Beach, CA Material Recovery Facility (MRF) early in the morning. "Most of the drivers have gotten to know Chase, and they'll honk their horns and wave on their way out for morning rounds," said Rhonda Clark, Chase's mom and a big fan of recycling. "He loves those trucks and thinks Rainbow is really cool."

Chase isn't the only one. Rainbow's relentless and strategic push for a greener, smarter and safer recycling operation is helping to inspire an entire industry. "We're an environmental sustainability company," said Sue Gordon, Rainbow's Vice President of Environmental and Public Affairs. "Rainbow is all about applying the materials we receive through our gates to a higher and better use." Even the trucks that Chase aspires to drive someday play a big role in Rainbow's eco-friendly strategy. They run on compressed natural gas, as they crisscross

Orange County picking up the trash and recyclables in Fountain Valley, Newport Beach, Westminster, Huntington Beach, Costa Mesa and Irvine.

Rainbow's recycling plant is equally advanced, with plans to move it even further along the cutting edge. The industry innovator wants to reduce downtime and energy consumption at the facility. It must also boost profits and expand into new markets. CP Manufacturing (San Diego, CA) and Siemens (Alpharetta, GA) are already enabling Rainbow to make significant progress in reaching its green objectives. Massive state-of-the-art material separation systems built by CP Group are enabling Rainbow to more efficiently process 25 to 30 tons of residential and commercial waste an hour. The CP conveyors and screening equipment are controlled and monitored by intelligent and integrated Siemens automation and SCADA solutions. The technology has already greatly improved uptime, reduced energy usage and allowed Rainbow to reach out to its first new market.



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But the recycler isn't resting on its laurels. Rainbow is keenly focused on taking its operation to the next level. Breakthrough capabilities ranging from innovative screen and disc designs that capture more marketable materials to baler integration and real-time inventory management are on Rainbow's roadmap. "Waste has become an incredibly valuable resource across the globe, and Rainbow is tuned into market demands everywhere from North America to Asia," said Bruce Shuman, Rainbow's President and CEO. "CP is at the heart of our growth and automation strategy, with the scalable solutions, the expertise and partnerships to help us maximize our separation systems and optimize our entire business for the future."

A Partnership in Innovation

When Rainbow upgraded its Huntington Beach MRF about seven years ago, it chose CP's rugged and advanced material sorting systems. CP designs and builds some of the most sophisticated material recovery facilities for leading waste processing companies around the world. The MRF manufacturer has acquired many of the best recycling solution providers to complement its own separation technology. The result is a true end-to-end offering that covers virtually every facet of the business. "We've brought the leading recycling technologies together in one powerful partnership under the CP Group," explained Bob Davis, CP Group CEO. CP owns cutting-edge baler maker IPS Balers, MSS optical sorters, rugged and revered Krause construction and demolition (C&D) sorters, and Advanced MRF, a coveted team of control system engineers and developers and a Siemens Solution Partner.



Top: Rainbow collection truck prepares to depart the plant.
Bottom: Rainbow plant worker counts bales of recyclables.
Photos courtesy of Siemens.

The Advanced MRF acquisition earlier this year is viewed across the industry as a real feather in CP's cap. "Advanced MRF is standardizing all of our baler and sorter systems on the Siemens Simatic platform, a totally integrated automation (TIA) solution," Davis noted. "That's a real game changer for innovative MRF operators like Rainbow that want to get as much information and recovery from their plants as possible."

Siemens' powerful WinCC SCADA system together with the Siemens S7-300 PLC (programmable logic controller) is monitoring the hundreds of motors, drives and heavy-duty conveyors carrying tons

of recyclables through the Rainbow plant. "If a motor is running too hot or a conveyor belt is clogged, the intelligent PLC immediately sends a trouble alert pinpointing the culprit," explained Richard Price, General Manager of Advanced MRF and a leading expert on the automation of recovery facilities.

Rainbow's IT director Gisela Gamboa gets the instant warnings on her smart phone, iPad and laptop. She can also see the plant from anywhere, thanks to multiple Web cam views and a SCADA interface delivered over Siemens' WinCC. "A real-time glimpse into the system, complete with time-stamped operational reports, is enabling us to anticipate problems, provide preventative maintenance and training, and avoid costly downtime," Gamboa said. "Without a system like this, all you know is you lost production time you'll never get back," she noted. "You don't know why or when it happened or how to eliminate the cause. This technology gives us a real edge that provides a trail of visibility and an operational standard that is a cut above the rest."

"Downtime can cause major disruptions," said Shuman. "Do you know what a garden hose can do to sorting machinery?" he mused, recalling some of the unexpected items finding their way onto Rainbow conveyors. "CP systems with Siemens monitoring and control capabilities enable us to see when we've sucked up a garden hose long before it can wreak havoc," Shuman said. Others haven't been so fortunate or forward thinking. Many MRF operators have gotten hosed for tens, even hundreds of thousands of dollars in downtime. Shuman says lengthy shutdowns have been virtually eliminated by CP and Siemens innovations.

A Partnership in Sustainability

With its lofty goal of zero waste, Rainbow is laser focused on running a smarter, more energy efficient plant capable of keeping more materials out of the landfill. About 93 percent of the waste Rainbow collects at the curb in neighborhoods across Orange County is recovered for reuse. Sorters on Rainbow's mixed waste processing line rip into trash bags from non-recycling households to "mine" the glass bottles, aluminum cans and plastics. Non-traditional materials are emerging as hot commodities too. The heavy-duty Krause line at Rainbow is fully capable of sorting construction and demolition debris, such as concrete from steel and wood. Tree branches and scrap lumber hauled in by local landscapers and contractors are diced into mounds of wood chips and eventually burned and turned into electricity at co-generation plants.

Materials once dreaded and tough to process at MRFs, such as metal coat hangers and plastic grocery bags, are now in high demand among manufacturers in places like China and Latin America. Rainbow and CP saw the changing market and deployed new screen technologies ahead of the curve. "Recyclables are constantly changing. There's far less newspaper and far more plastic bags and electronics coming through plants today," said CP's Davis. "Our latest screen and disc equipment designs allow recyclers to effectively capture the new wave of materials," noted Davis, who credits Advanced MRF and Siemens in part with CP's leadership in materials separation.

"We're able to focus on developing new and important mechanical product lines, such as electronics waste sorting and energy-from-waste production, because we know our control and automation platform is covered. That's a given," said Davis. "We aligned ourselves with Siemens years ago, and we've never looked back. Siemens is bringing new ideas to the marketplace," he noted. "And now that at least half our business is driven by global sales, we have a true forward-thinking partner that supports us all over the world."

Forward thinking led Rainbow to begin expanding its operation into key markets across the U.S., using Siemens' WinCC. The same SCADA system that allows the recycler's IT director, management and line operators to track Rainbow's flagship plant in Huntington Beach, California, is enabling Rainbow to enter underserved markets like Pensacola, FL. "We are among the best in the industry," said Schuman. "Our experienced team can now watch over and manage our Florida operation from anywhere, using real-time data and live camera images pushed to a range of devices over WinCC," he explained.

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Rainbow's Pensacola plant processes about 130 tons of waste per day from households across Escambia and Santa Rosa Counties in the Florida panhandle. The control platform will grow right along with the new plant. "Our Siemens SCADA system has opened doors to exciting new growth opportunities at Rainbow," Shuman said. The Pensacola expansion is just the beginning of advancements to come.

"Rainbow is a dynamic operation on the verge of integrating its baler operation into its overall operator interface system (OIS), which monitors the primary plant using the Siemens SCADA platform," explained Advanced MRF's Price. "Rainbow will see real-time baler production data anytime, anywhere through CP's OIS. That will be a major milestone across the industry," Price added. "Every MRF operator wants to be able to track baler production real time, and CP can deliver the capability today."

Down the line, Rainbow plans to add Siemens RFID (Radio Frequency Identification) technology to leap forward into cutting-edge inventory management. It's the missing link in most recycling operations, where today's bales are tallied manually on clipboards by plant workers. Once that loop is closed, Rainbow will know everything there is to know about each and every bale on the plant floor; how much it weighs, whether it's sold and where it's headed. "Real-time inventory management changes everything," said Craig Campbell, Rainbow's Vice President of Materials Transfer. He's known as Rainbow's magician, a recyclable commodities expert who knows how to make tightly compacted bales of recovered materials disappear from Rainbow's plant floor. "The more information we have about our inventory at any given moment, the more effective, proactive and profitable we will be in the marketplace," Campbell noted.

"We've never run into a red light with Siemens, they're real go-getters like us," said Davis. "Our Siemens partnership has replaced the 'We can't do that' with eye-opening aha moments and the confidence that comes with 'We can do that,'" Davis noted with a smile. The development of seamless Profibus network-delivered solutions, such as the PROFIsafe emergency e-stop safety module, is an example of the out-of-the-box vision that can result from customer centricity. "Siemens is committed to helping CP, Advanced MRF and Rainbow create whatever it is their machines, businesses and dreams need to evolve to, and that's exciting," said Al Esparza, Siemens Industry Account Manager. "That's exactly why we're here."

With the Future in Mind

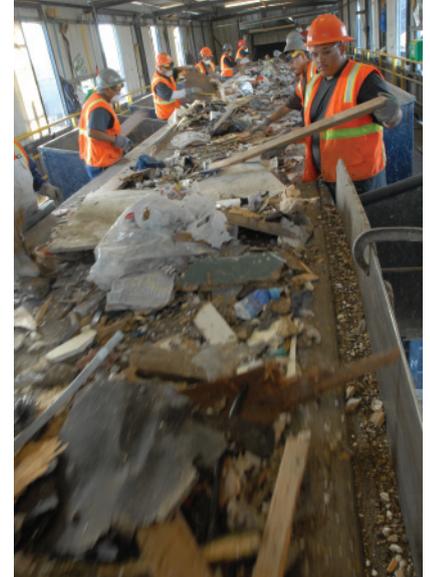
The more Rainbow knows about the energy efficiency of its plant operation, the more control it has over its own environmental footprint and bottom line. "We have a companywide sustainability push to reduce our footprint," said Shuman. "The knowledge and insight that CP and Siemens can pull from our plant in the form of operations and energy usage data is critical to our success going forward," he added.

Not only can the Siemens equipment report on energy consumption at the material recovery facility, but it can also cut energy usage as well. "Intelligent motor control is a critical building block for a greener plant," said Esparza. "Variable frequency drives (VFDs), advanced PLCs, sensors and WinCC SCADA can dramatically shrink an MRF's dependence on the grid," he detailed. Siemens regenerative SINAMICS G series drives actually put excess energy back into the power grid. Three-phase motors, which became mandatory in 2011, are cutting energy waste.

"The legacy motors driving our separation system are typically one of the plant's biggest power hogs," said Shuman, who went to CP for a greener solution. CP and Advanced MRF offered up the Siemens Simatic ET 200S Motor Starter. The modular device can transform a single-speed motor into an intelligent device that can communicate with the PLC running the show. "We have full intelligence across the nearly 300 motors running our operation. We can pull information from each device and cut energy usage by at least 10 percent per motor," Shuman noted. "That adds up to a smarter, greener plant with a more eco-friendly footprint."

Rainbow's shrinking footprint is leaving a positive impression on the communities it serves. The company has partnered with more than 70 Orange County schools and offers a recycling program on its Web site www.rainbowes.com, educating kids on the benefits of recycling. The students could probably learn a lesson or two from Chase Clark, who loves to recycle with Rainbow. "Recycling is a very big deal at our house, and Chase is our toughest enforcer," laughed Rhonda Clark. "It's important to think about our own footprints, what we're using and keeping out of the landfill," she said. "I appreciate what Rainbow does every day, because it really is for the future." | **WA**

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Workers sort through construction and demolition materials on the Krause line at Rainbow.



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