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www.wasteadvantagemag.com March 2012 Vol.3, No.3

# WasteAdvantage<sup>magazine</sup>

The Advantage in the Waste Industry



The City of Billings, MT  
Solid Waste Division:  
**STREAMLINING  
OPERATIONS  
FOR EFFICIENCY**

**Maintaining the Life  
of Your Engine  
BY OPERATING  
IN A WATERLESS  
CAPACITY**

**PLUS:**  
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The Importance of  
Recycling Software

Zooming in On Bird Control

Government Gone Viral





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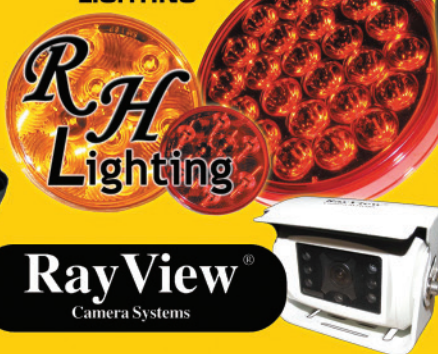
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## Editor's Note



### WE ARE CURRENTLY GEARING UP AND GETTING READY FOR THE WASTE EXPO

show which is now only a couple of months away! *Waste Advantage Magazine* will be at booth #13220 ready to talk to you and get your input and comments. This is a great time of the year for us because not only do we get to see old friends, but also meet new people and see new technologies and innovations.

This month's issue has a great variety of articles from outreach to engines. Our spotlight is on the city of Billings, MT Solid Waste Division which has been not only optimizing their routes and keeping costs down, but also upgrading their landfill in order to remove the gas and turn it into a marketable product (page 14). "Maintaining the Life of Your Engine by Operating in a Waterless Capacity" (page 20) discusses an innovative way to save fuel and maintenance costs, while "Gasplasma®: Revolutionizing the Waste-to-Energy landscape" (page 34) presents a different type of waste-to-energy technology in order to develop sustainable energy sources. And don't miss "Control Your Positive Message" (page 26) which gives you some communication and outreach techniques when facing opposition, or "Rethinking Your Safety Committee" (page 37) which names some goals and objectives for getting everyone involved.

In addition, our great R/T/L section has even more interesting topics for you to check out, such as the importance of recycling software (page 46), landfill bird control (page 48) and using social networking sites to your advantage (page 51). Overall, it is a great issue and we want to hear any feedback you may have. See you at the Waste Expo!

Best Regards,

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ZAC 'em up and run 'em like a business.

JOHN WAYHART



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The metals pile at the Billings Regional Landfill. Approximately 900 tons of metal are recycled annually.

Photo courtesy of the City of Billings, MT Solid Waste Division.

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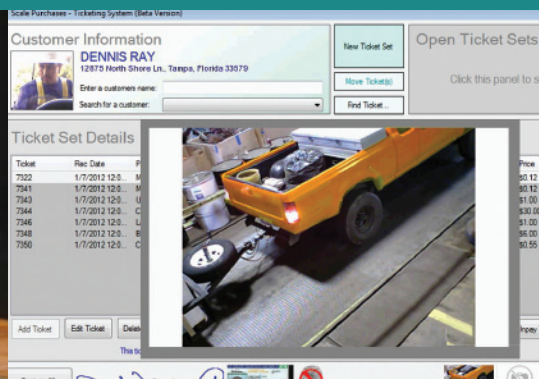
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Photos courtesy of Evans Cooling Systems, Aeon Blue Software and Advanced Plasma Power.



6 WasteAdvantage Magazine March 2012





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## Plastic Bag and Wrap Recycling Climbs 50 Percent

Recycling post-consumer plastic bags and wraps reached a record high of nearly 972 million pounds in 2010, according to a national report developed by Moore Recycling Associates, Inc. on behalf of the **AMERICAN CHEMISTRY COUNCIL (ACC)** (Washington, DC). This represents an increase of more than 117 million pounds, or 14 percent, over 2009 and an increase of 50 percent since 2005, when tracking this category of plastics recycling began. Over the past five years, the recycling of plastic film grew seven times faster than recycling overall, according to data from EPA. ACC attributes the recent uptick in plastics film recycling to a combination of increased access to collection points via grocery and retail chains, better labeling on bags and a rise in consumer awareness. To continue building on the growth of plastics film recycling, ACC has formed a new Flexible Film Recycling Group (FFRG), which includes members from resin suppliers to film manufacturers, brand owners and recyclers. Said Steve Russell, vice president of plastics for the ACC, "The FFRG looks forward to working with all parts of the polyethylene film value chain to make it even simpler to recover and recycle this valuable plastic material."

For more information, visit [www.americanchemistry.com/plastics](http://www.americanchemistry.com/plastics).

## Republic Services of Indianapolis Cleans Up After Superbowl

While fans were watching the Giants and Patriots play football, another team in blue uniforms worked in the background and hoped to go unnoticed. The 75 men and women of **REPUBLIC SERVICES** of Indianapolis, IN collected and hauled away

nearly 500 tons of waste and recycling from the football stadium, the Convention Center and the Super Bowl Village. Republic began formal planning for the cleanup in mid-2011. Unlike other games, thousands of additional seats were installed for the Super Bowl, adding more fans and more trash. Additional security, strict access schedules and game-day traffic created a few additional challenges for Republic garbage truck drivers. Drivers had to conform to precise schedules as they were allowed a 20-minute window during half time to remove a 42-cubic yard compactor box and attach a new one. The truck was not allowed back on the property until after midnight game night. "After the game, most people were talking about the big plays or the commercials. Our team was taking care of business so that before you knew it, you couldn't even tell that nearly 250,000 people were there," said John Drier, General Manager for Republic Services of Indianapolis.

For more information, visit [www.republicservices.com](http://www.republicservices.com).

## Record Number of Nominees for Driver of the Year

The **ENVIRONMENTAL INDUSTRY ASSOCIATIONS (EIA)** (Washington, DC) received a record 644 nominations for its Driver of the Year awards, a program recognizing and honoring waste industry drivers committed to safety and high quality service. Winners are announced at the Waste Expo in May. EIA's Director of Safety David Biderman said, "These nominees represent the excellence that so many drivers in our industry demonstrate on a daily basis. They all have outstanding safety records, commitment to their companies and great respect for high quality customer service."

For more information, visit [www.environmentalisteveryday.org](http://www.environmentalisteveryday.org).

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- Front Loader
- Heavy-duty arms
- Strongest steel specs in the industry

2011 Mack 40yd Mammoth  
• Front loader  
• Heavy-duty arms  
• Strongest steel specs in the industry

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## MARCH 2012

**19 – 22: SWANA's 35th Annual Landfill Gas Symposium**  
Gaylord Palms  
Orlando, FL  
[www.lfg.swana.org](http://www.lfg.swana.org)

**20 – 21: Plastics Recycling Conference**  
Hyatt Regency Atlanta  
Atlanta, GA  
[www.plasticsrecycling.com](http://www.plasticsrecycling.com)

**22 – 24: Mid-America Trucking Show**  
Kentucky Fair and Exposition Center  
Louisville, KY  
[www.truckingshow.com](http://www.truckingshow.com)

**27 – 28: Environmental Research and Education Foundation's Regional Summit on Sustainable Solid Waste Practices and Research**  
DoubleTree Suites by Hilton  
Austin, Texas  
[www.erefndn.org](http://www.erefndn.org)

## APRIL 2012

**15 – 19: 2012 ISRI Convention and Exposition**  
Mandalay Bay  
Las Vegas, NV  
[www.isriconvention.org](http://www.isriconvention.org)

**23 – 25: 20th Annual North American Waste-to-Energy Conference**  
Holiday Inn by the Bay  
Portland, ME  
[www.nawtec.org](http://www.nawtec.org)

**25 – 27: 41st Environmental Show of the South**  
Gatlinburg Convention Center  
Gatlinburg, TN  
[www.tn.gov/environment/swm/conference](http://www.tn.gov/environment/swm/conference)

**30 – May 3: WASTE EXPO 2012**  
Las Vegas Convention Center  
Las Vegas, NV  
[www.wasteexpo.com](http://www.wasteexpo.com)

## MAY 2012

**20 – 23: 2012 New York Federation of Solid Waste and Recycling Conference and Trade Show**  
The Sagamore  
Lake George, NY  
<http://nyfederation.org>

## JUNE 2012

**3 – 6: Safety 2012**  
Colorado Convention Center  
Denver, CO  
[www.asse.org](http://www.asse.org)

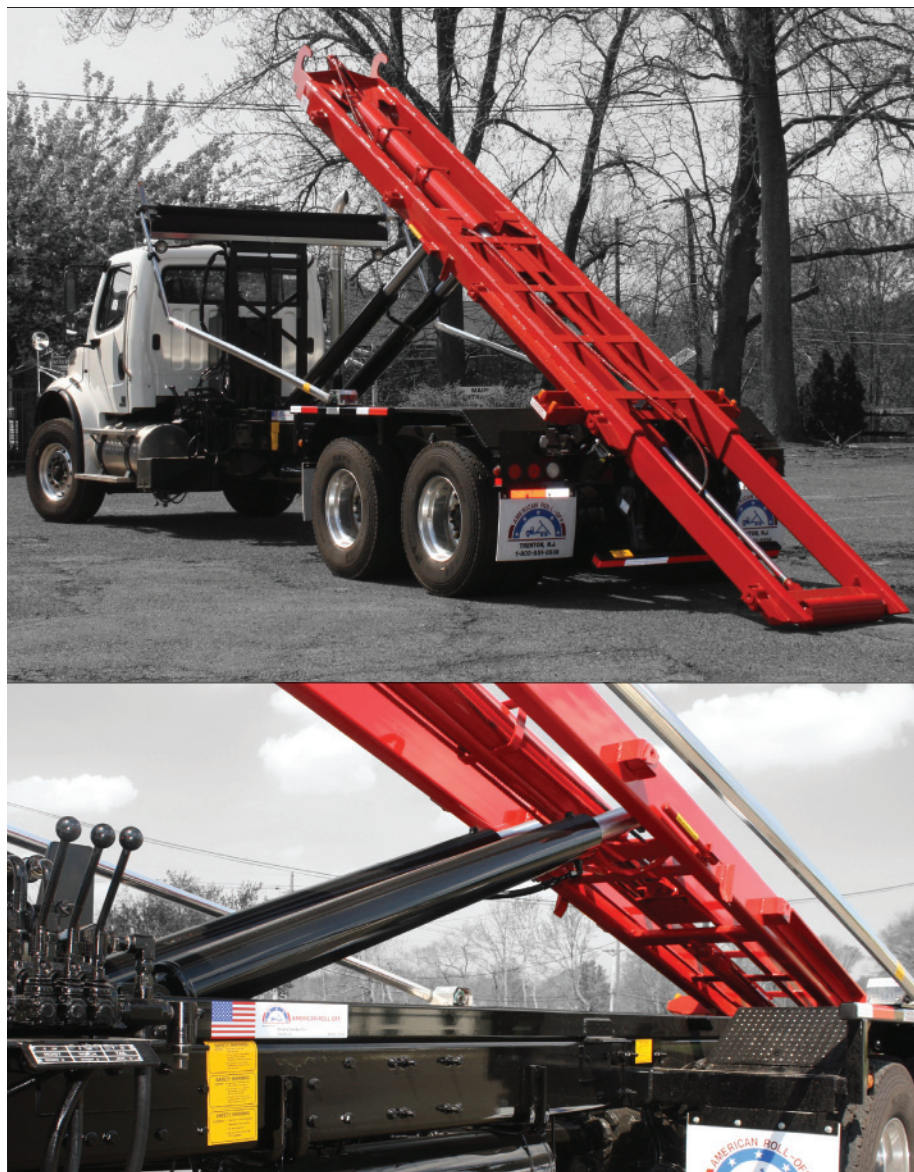
**4 – 6: Illinois Recycling and Waste Management Conference and Trade Show**  
Clock Tower Hotel and Conference Center  
Rockford, IL  
[www.illinoisjointconference.com](http://www.illinoisjointconference.com)

**12 – 13: Waste Conversion Congress East Coast**  
Radisson Plaza-Warwick Hotel  
Philadelphia, PA  
[www.renewable-waste.com/waste-conversion-east](http://www.renewable-waste.com/waste-conversion-east)

**19 – 20: Biogas USA East and Midwest**  
Chicago, IL  
[www.greenpowerconferences.com](http://www.greenpowerconferences.com)

**19 – 22: Air & Waste Management Association 105th Annual Conference and Exhibition**  
San Antonio Convention Center  
San Antonio, TX  
[www.fivesenses.com/ee6](http://www.fivesenses.com/ee6)

**24 – 26: 2012 Summer Conference**  
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## SWANA Issues New Policy on Waste-to-Energy

SWANA has issued a policy that renews SWANA's support of waste-to-energy as an important part of an integrated solid waste management system. SWANA believes that this policy will support the many communities that are considering expanding or building new waste-to-energy facilities. The policy states that the use of waste-to-energy technology should be consistent with the EPA's current waste management hierarchy and local government integrated solid waste management plans that include existing and planned waste prevention, waste reduction and recycling programs. The policy then outlines the best practices a community must consider before implementing this technology.

This update is the culmination of the efforts of SWANA's Waste-to-Energy Technical Division, which spearheaded the effort. "It is important for the public to understand that waste-to-energy facilities positively impact greenhouse gas emissions on a lifecycle basis," stated Division Director Joe Murdoch. "This reflects the significant advances and investments in air pollution control that have been made at these facilities as the technology has evolved and complied with Federal law."

For more information, visit [www.swana.org](http://www.swana.org).

## EPA's GHG Reporting Program

For the first time, comprehensive greenhouse gas (GHG) data reported directly from large facilities and suppliers across the country are now easily accessible to the public through EPA's GHG Reporting Program. The 2010

GHG data released on January 11, 2012 includes public information from facilities in nine industry groups that directly emit large quantities of GHGs, as well as suppliers of certain fossil fuels and high global warming gases.

On January 10, 2012, EPA issued a proposal to determine whether the Greenhouse Gas Reporting Program data elements in subparts L (Fluorinated Gas Production), DD (Electrical Transmission and Distribution Equipment Use), QQ (Importers and Exporters of Fluorinated Greenhouse Gases Contained in Pre-charged Equipment or Closed-cell Foams), RR (Geologic Sequestration of Carbon Dioxide), SS (Electrical Equipment Manufacture or Refurbishment), and UU (Injection of Carbon Dioxide) of Part 98 would or would not be entitled to confidential treatment under the Clean Air Act. These data elements will be reported to EPA for the first time in 2012. This proposed rule also contains proposed confidentiality determinations for seven new data elements recently added to subparts II (Industrial Wastewater Treatment) and TT (Industrial Waste Landfills), as well as minor updates to Table A-6 of Part 98 to reflect the technical revisions recently made to subpart TT.

If you submitted a GHG report for reporting year 2010 and you will not be reporting on any of the new 2011 source categories, then your report is due by April 2, 2012. Slide presentations from the e-GGRT Webinars held last year are available on the training page. If you are required to report for any of the new 2011 source categories, then your report is due on September 28, 2012. However, if you are required to report for any of the new 2011 source categories and if your facility submitted a GHG annual report for reporting year 2010 under another subpart (e.g., stationary fuel combustion), then by April 2, 2012 you must notify EPA through e-GGRT that you are not required to submit the second annual report until September 28, 2012. The reporting deadline extension applies to all subparts being reported by the facility or supplier. Reporter registration is a necessary first step in meeting your GHG reporting obligations.

For more information, visit <http://epa.gov/climatechange/emissions/ghgrulemaking.html>. The e-GGRT registration module is available at [ghgreporting.epa.gov](http://ghgreporting.epa.gov).

## OSHA Announces New Online Outreach Training Program Providers

OSHA announces its selection of 10 OSHA authorized training providers to deliver 25 online courses as part of its Outreach Training Program. The OSHA Outreach Training Program teaches workers how to identify, prevent and eliminate workplace hazards. The program also informs workers of their rights, employer responsibilities and how to file a complaint. "We are pleased to announce the selection of these online training providers," said Assistant Secretary of Labor for OSHA Dr. David Michaels. "These high-quality online courses will allow a greater number of workers to receive valuable interactive training supported by safety professionals—especially in remote areas with limited access to standard classrooms."

The online courses are voluntary and are not required by OSHA, but they provide training that can help protect workers' safety and health and help employers reduce the high costs of worker injuries and illnesses. Workers must also receive additional training on hazards specific to their job. The organizations that OSHA selected to offer the online courses will provide a variety of 10- and 30-hour classes designed for Construction, General Industry and Maritime. Since OSHA began authorizing training providers to offer Web-based distance learning in 2001, the online Outreach Training Program has grown significantly. More than 135,000 workers were trained online in 2011—a five-fold increase from the number of online students trained in 2007.

For more information and access to courses, visit <http://s.dol.gov/L6>.

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# The City of Billings, MT Solid Waste Division: Streamlining Operations For Efficiency

**Not only is the Solid Waste Division optimizing hauling routes and keeping costs down, but they have also ENHANCED THEIR LANDFILL IN ORDER TO REMOVE ITS GAS AND PROLONG ITS LIFE.**



### THE CITY OF BILLINGS, MT'S HISTORY OF THE SOLID

Waste Division begins in 1948 with the introduction and usage of a horse drawn buggy. The service allowed for the transportation of residents' refuse to the local landfill located near Coulson Park, south of Billings along the Yellowstone River. In the late 1960s, the Solid Waste Division purchased its first rear-loading garbage truck. With two loaders and a driver assigned to each truck, Billings residents' garbage was collected mainly from alleys and then compacted in route to the current landfill. Two-manned ShuPak trucks joined the growing fleet, which increased worker efficiency. By 1980, roll-off trucks that transported large drop boxes were purchased and the first automated front loaders began service to accommodate the increasing commercial demand. With the addition of the one-manned barrel trucks, cans were no longer used in alleys and the required manpower was reduced by nearly 50 percent over the next 10 years. Although Billings experienced rapid growth between 1977 and 1993, costs to residents remained a constant \$54 per year as the division simultaneously increased operating efficiency. Currently, Billings residents pay \$98 a year. With a fleet of 43 trucks and 64 employees, 33,000 homes receive solid waste collection.

the Yellowstone River. The property consists of approximately 842 acres with 254 acres licensed for waste disposal. In 1999, major improvements were made to the landfill that included upgrading the scales, public drop boxes, developing a composting area and putting in a paved road.

As a Class II facility, the landfill accepts municipal solid waste, yard waste, wood, construction and demolition debris, asbestos, contaminated dirt, tires, sewage sludge, refinery waste and agricultural waste. Vehicles entering the landfill are charged by load weight. Recycling services offered include metal collection, newspaper, cardboard, antifreeze and used oil. The landfill is completely compliant to all local, State and federal laws and the average amount of waste accepted each year is 240,000 tons.

The Billings Solid Waste Division has exclusive residential hauling rights within the City of Billings. The Regional Landfill has historically accepted waste from the City of Billings and Carbon, Stillwater and Yellowstone counties. In addition to these communities, the landfill now accepts waste from Musselshell and Treasure counties as well as the Town of Pryor and the City of Big Timber. In total, it serves a population of approximately 200,000.

### Billings Regional Landfill

The Billings Regional Landfill is located approximately three miles south of Billings, near

### Streamlining Operations

Fortunately, the landfill has not experienced a significant drop in revenue from decreased construction



Mike Ogburn, MDU Landfill Gas Operations Specialist, is responsible for fine-tuning the inner workings of the plant. Images courtesy of the City of Billings Solid Waste Division.








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## The City of Billings, MT Solid Waste Division: Streamlining Operations For Efficiency



Division employees working the annual Toxic Trash Round-Up, a household hazardous waste event for five counties. In 2011, the event drew 1,500 cars and collected over 40 tons of hazardous waste.

activity in the area. However, the Solid Waste Division has struggled to maintain their level of service without increasing rates. "We are streamlining our operations in order to make us more cost efficient. For example, we are incorporating software to optimize our routes, thereby using less fuel and preventing excessive wear of our trucks. We have also increased mandatory health and safety meetings for all solid waste staff in order to keep insurance costs down and injury claims at a minimum," says Vester Wilson, Solid Waste Division Superintendent.

### Customer Service

The Division prides itself in providing a high level of service for a low cost. Residents pay \$98.00 per year, or \$8.17 per month. "We are able to provide a 96 gallon container for our curb service customers or 300 gallon containers for our alley service. We are also able to provide 96-gallon yard waste containers for residents that want them. In addition, we pick up any extra trash every week for

our curb service residents at no charge. For alley customers, we clean the alleys once every three weeks. This fee also includes free access to the landfill for City of Billings residents," says Wilson.

The Division also has a program called Carry-Out Service to help residents that cannot take their garbage to the curb. Collection workers go to specific houses and pick up the refuse for a small fee. They are also able to have lower fees for commercial collection and roll-off service, due in part to monthly safety training and experienced drivers. "We have fixed routes for all of our collections and this also adds to the efficiency of our operations," says Wilson.

### Landfill Enhancements

A persistent challenge for the Division over the years has been the need to prolong the life of the Regional Landfill in order to serve customers as long as possible without a costly expansion to the existing site. In order to meet this challenge, several waste diversion programs have been implemented that have proved not only successful in saving air space, but also popular with customers. "For over a decade we have been composting yard waste at the landfill. However, approximately six years ago we began a yard waste curbside collection program that has diverted almost 13 percent of the waste volume entering the landfill," says Wilson. "In addition, we have partnered with a local electronics recycling firm to host a bi-annual E-waste collection events for landfill users. We also divert metal-containing waste from the landfill for recycling."

Tony Lehner, Landfill Supervisor, says that until recently the landfill was not particularly user friendly. A little over a decade ago, the Regional Landfill consisted of dirt roads, no scale house and customers were required to drive into the waste pile to dump their loads. In 1999, the landfill was revamped with major infrastructure improvements, including a new scale house, paved roads and designated drop-off containers for customers away from the active fill area. In addition, a permanent used oil and used antifreeze drop-off site was installed, along with

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A City of Billings front load truck delivering commercial waste to the landfill.



The Billings Regional Landfill scale house. View looking north towards the City of Billings and the rimrocks.

recycling bins for newspaper, aluminum and cardboard. Landfill infrastructure improvements took approximately 18 months to complete and were met with resounding approval by the public. "As a result, going to the landfill is not the adventure it once was; no more flat tires and getting stuck in mud," says Lehner.

In 2009, Montana Dakota Utilities (MDU) and the City of Billings entered into a private/public partnership to construct and operate a system to remove landfill gas from the Billings Regional Landfill, clean it and deliver the gas as a marketable product into the local pipeline network. As a result, 61 3-foot diameter vertical extraction wells were drilled and completed in early 2010. A piping network and processing plant for the gas were constructed in the fall 2010 and the facility began operating in late 2010. Because the gas extraction system was voluntarily constructed and not required under environmental regulation, both the City and MDU benefit from carbon credits as well.

## Facing Current and Future Challenges

Expanding services while keeping rates at the level the public has come to expect

is also a challenge for the Division. "One of our biggest challenges is educating the public as to the cost of providing the services they have come to expect and those they want us to incorporate," stresses Wilson. "For example, expanding our recycling programs is a challenge due to the lack of local markets for recycled materials. The closest markets are typically a state or two away from Billings. Transportation costs prevent several commodities from being economically feasible to recycle. The public wants to do the right thing but not necessarily at the cost for the service."

As for future plans, Wilson says that not only are they currently providing household hazardous waste and electronics collection events for all landfill users, but they are also looking into implementing more recycling at the landfill such as food waste, asphalt shingles and gypsum. "We are planning to construct a permanent hazardous waste collection facility to better service our customers." | **WA**

*For more information on the City of Billings, MT Solid Waste Division, contact Vester Wilson, Solid Waste Superintendent, at [wilsonv@ci.billings.mt.us](mailto:wilsonv@ci.billings.mt.us).*





  
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## Maintaining the Life of Your Engine by Operating in a Waterless Capacity

Mike Tourville

**Once in use, A WATERLESS COOLANT CAN LEAD TO SIGNIFICANT FUEL SAVING AND MAINTENANCE, not to mention reduced down time. That's an investment well worth looking into.**

### ENGINE MANUFACTURERS HAVE BEEN CONTENDING

with heat transfer issues for more than 100 years with a multitude of modifications: powerful fans, larger radiators and applying engine performance limitations. The struggle to gain efficiency and meet tighter emissions standards while controlling costs is an ongoing challenge. Despite the advances in engine cooling technologies, one aspect has remained relatively unchanged for more than 50 years: the basic formula for coolant is still a 50/50 mix of ethylene glycol and water. Additives have improved and longer life coolants have evolved, but water has been a constant element. Water is a good thermal conductor, but it has its drawbacks and limitations: corrosion and a low boiling point, to be more specific. Cooling systems are designed to work within the limitations of water, and a lot of energy is consumed to keep the coolant from reaching its boiling point. A simple answer to consider has been developed to address these issues: to eliminate the problems associated with water, remove the water. The absence of water in a waterless heavy-duty coolant (HDC) prevents corrosion and avoids electrolysis. Perhaps the most important aspect

is the high boiling point of 375° F, which translates into a large separation of the coolant operating temperature and the boiling point of the coolant.

What is good about water is it's cheap and has superior thermal conductivity—as long as it remains a liquid. Water retains only 4 percent of its thermal conductivity when it changes into vapor. On the other hand, water is a poor choice because its boiling point is too low, and there is very little separation between the operating temperature of the coolant and the boiling point of water. If the coolant boils over, vapor pockets create an insulating barrier between the metal and the coolant. The low boiling point of water becomes the failure temperature of traditional cooling systems. With its high boiling point of 375°F, a waterless HDC has the capacity to safely operate at higher temperatures without overheating, resulting in less downtime.

### Maintenance Savings

Because this type of heavy duty coolant does not contain water, electrolysis and corrosion are eliminated.



This shows what happens when the additive build up collects in a coolant filter. This is avoided with a waterless coolant. Images courtesy of Evans Cooling Systems.



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## Maintaining the Life of Your Engine by Operating in a Waterless

### SAE TYPE II FUEL TEST

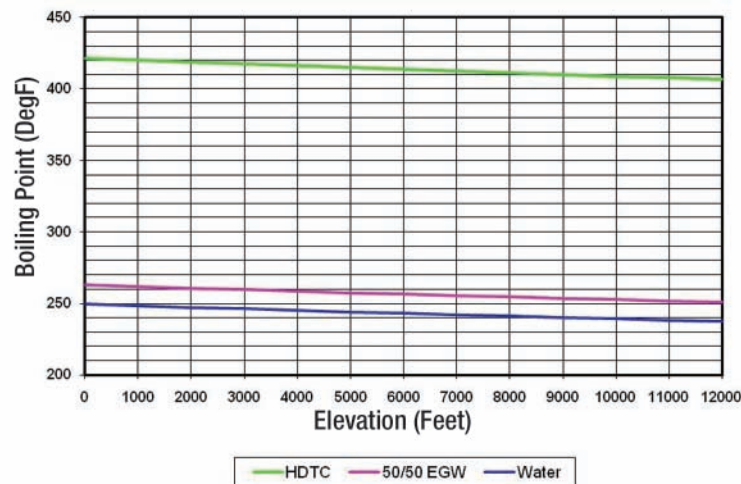
The SAE Type II Fuel testing using the waterless coolant and 215° thermostats and eliminating the fan time variable, still produced a 3 percent improvement in fuel efficiency. Recent emissions testing showed a reduction of 3.6 percent in CO<sub>2</sub> emissions and a 4 percent fuel economy improvement in a test performed by Emisstar in August 2011. Emisstar provides independent third party testing services for the development of sustainable transportation technology strategies.

Water is the root cause of corrosion in engine cooling systems, and even the latest inhibitor technology often fails to prevent component failure. The most expensive corrosion problem is cavitation of cylinder liners. Cavitation erosion is caused by collapsing bubbles that cause erosion over the surface of the exterior of the cylinder liners. The resulting erosion eventually penetrates the wall of the cylinder and permits coolant to flow into the cylinder.

The large separation between the operating temperature and the boiling point of waterless HDC stops cavitation erosion of cylinder liners.

In a pressurized system, the water-based coolant must be maintained at a temperature below the boiling point of water to keep the system functional. The absence of water means that vapor will not be formed, which can cause pressure in the system. Typically, cooling systems have up to a 15 lb. pressure cap to raise the boiling point. Each pound of pressure raises the boiling point by about three degrees, which means a 15 lb. cap would raise the boiling point to about 257°F. This is still dangerously close to the operating temperature of the coolant in an engine, especially under hot and dusty environments. The

Boiling Points for Evans Waterless HDTC, 50/50 EGW, and Water vx Elevation (15 PSIG Cap Pressure)



Boiling points for the waterless HDC, 50/50 EGW and water.

waterless HDC formula operates under a much lower pressure, decreasing stress on hoses and gaskets, reducing the likelihood of leaks. Additionally, a lower pressure brings an added safety element to the operator. Opening the cap on a hot radiator can result in injury to anyone within close proximity of the radiator.

The endurance of the engine is improved by maintaining control of engine metal temperatures at all times. The absence of cavitation erosion extends the life of cylinder liners and

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◀ Cylinder Liner cavitation erosion can be virtually eliminated with waterless Heavy Duty Coolant.

coolant pumps. Pump seals last longer because there are no abrasive additive deposits on the seals. Water also contributes to pump and cylinder liner cavitation and corrosion, as well as hot spots that can damage engines.

A waterless coolant can last forever, as long as it doesn't become contaminated with water. With a waterless HDC, periodic coolant replacement and disposal is not necessary and supplemental coolant additives (SCAs) are not required. HDC additives remain stable and in solution during storage and use resulting in no abrasive additive deposits. The coolant will not evaporate which means the occasional topping off can be greatly reduced.

## Fuel Economy

Most people wouldn't associate coolants with fuel economy. The energy that it takes to maintain coolant temperatures below the boiling point of water is a huge waste of fuel. The huge separation between the operating temperature of the coolant and the boiling point allows an extra cooling capacity that your system

already has. When the coolant temperature can be safely raised, the result is a more efficient heat transfer from radiator to the ambient air. This allows an engine to run continuously under harsh conditions using less fan power and saving fuel. Independent evaluations and fleet testing have consistently demonstrated fuel economy improvements between 3 to 9 percent.

Due to the severe performance requirements refuse vehicles encounter daily, such as constant starts and stops, heavy loads and the lack of ram air to cool the engines, fuel savings is adversely affected. A waterless coolant allows a reduction of fan-on time by up to 40 to 50 percent. The fans on heavy-duty diesels draw considerable horsepower, therefore minimizing fan operation leads directly to significant fuel savings.

Along with reducing fuel consumption, decreasing emissions, maintenance savings are also achievable with a waterless HDC. The waterless formula does cost more per gallon than a traditional 50/50 ethylene glycol and water mixture. However, once in use, the fuel saving and maintenance benefits have

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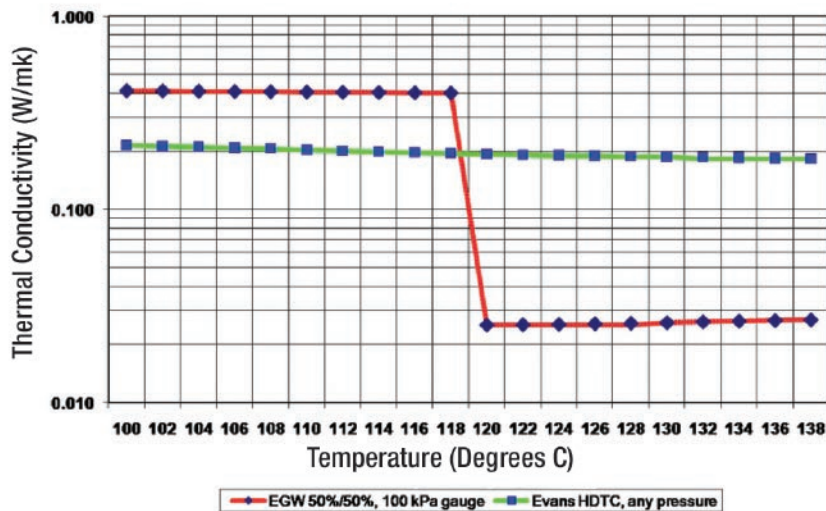
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## Maintaining the Life of Your Engine by Operating in a Waterless Capacity

**Thermal Conductivity of the Liquid and Vapor Phases  
of Water-Based Coolant vs Evans HDTC**  
(The vapor phase of water-based coolant has almost no thermal conductivity)



Thermal conductivity of the liquid and vapor phases of a water-based coolant versus a waterless HDC.

demonstrated an ROI of 6 months or less, not to mention reduced down time. That's a considerably short payback period, and an investment well worth looking into. | **WA**

*Mike Tourville is Sales and Marketing Director for Evans Cooling Systems, Inc. (Sharon, CT). He can be reached at (860) 668-1114 or via e-mail at [mtourville@evanscooling.com](mailto:mtourville@evanscooling.com).*

## CASE STUDY: VEOLIA ENVIRONMENTAL SAVES FUEL

Veolia Environmental Services in Florida was trying to reduce fuel consumption. They did a year-long evaluation using Evans Cooling Systems' heavy-duty waterless coolant beginning in October 2009 and found that waste vehicles in Sheboygan, WI saved in the range of 4.4 percent fuel. Further testing in Apopka, FL demonstrated savings in excess of 9 percent due to reduced fan time when fan temperature is raised to 230° F. The coolant has paid for itself within a few months and no overheating issues were reported. Harold Graves, Regional Maintenance Manager, East North America says, "We're very happy with the way Evans has presented their product and services. They are data purists, and the results are indisputable. Veolia is beginning to schedule the rest of the regional fleet and plans to continue to expand the conversions to other areas. We're looking at converting off-highway equipment in the northeast, not only for fuel saving purposes, but to also improve performance and productivity."

Skip Webber, Area Maintenance Manager, Solid Waste, North America, agrees, "The waterless coolant is a great product and we're seeing significant fuel economy improvement. We haven't had a problem with any of the converted trucks, including overheating or maintenance issues."

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## Control Your Positive Message: Communication and Outreach Techniques to Engineer Your Desired Outcome while Mitigating Opposition

Daniel Larrison

**The approval of any waste facility is an uphill battle. However, with AMPLE PLANNING AND COORDINATED OUTREACH, WASTE COMPANIES CAN CHARGE UP THE HILL TOWARDS VICTORY.**

### A NATIONWIDE SURVEY ON WASTE ISSUES WAS

recently conducted.<sup>1</sup> Not surprisingly, the results showed that landfills are not a popular land use among the public. Specifically, 62 percent of respondents said they would oppose a new landfill in their community. This number is startling and demonstrates the challenges in securing approval for new waste sites.

It is important to recognize that the approval of waste facilities is often a political decision. As such, ultimate decision makers (county commissioners, city councils, state regulators, etc.) are susceptible to influence. This fundamental is key to understanding the best way to approach the approval of waste projects.

### The Opposition

The opposition to landfills is intense and ferocious. In most cases, emotional residents will begin an organic grassroots campaign to oppose a waste project. This opposition is fueled by NIMBY (not in my backyard) sentiment and general fear of the unknown. This opposition can quickly spread throughout a community. Therefore, it is paramount to counter the opposition with an adequate level of support in order to provide political cover for decision makers to approve the project in the face of intense and hostile opposition.

No waste project is immune from opposition, whether it's a transfer station, waste-to-energy facility, sludge plant or even a recycling facility; building support for waste projects is no easy feat. Indeed, it is an enormous challenge that requires both time and an advanced outreach plan—a plan that is similar to the approach used in traditional political campaigns. A typical public relations approach is not good enough—these types of projects require on the ground grassroots outreach.

Daniel Burnham, the famed architect who helped mold the development plan for the city of Chicago, said:

“Make no little plans. They have no magic to stir men's blood and probably themselves will not be realized.” That same sentiment can be applied to outreach campaigns for waste projects. A full campaign involves several, integrated components: message development, direct mail, door-to-door canvassing, digital media (online advertising, social media platforms, Web site), print advertising, multi-media presentations and telephone outreach.

### Effective Message Development

Any successful project begins with effective message development. The odds of success are increased with message discipline. For landfill projects, this includes a reframing of the message. Companies should avoid using the word landfill. Instead, replace it with disposal facility. Surveys and focus groups prove that this subtle change dramatically increases the public's reception to waste projects.

It is key to make the approval of a waste facility into a referendum on economics. A crafty communication effort can shift the debate into more than the need for a disposal facility. It can become a debate on whether the public will support, for example, 10 new schoolteachers and five new police officers—a landfill can provide via hosting fees and tax payments. If this is done properly, decision makers will feel pressured into voting on whether they support hiring more teachers and police officers, and not merely on the issue of waste.

It is difficult to move the public by digging too deep into the technical aspects of a project. People have limited attention spans so the prevailing messages must fit into quick, concise talking points. However, there is still an importance in educating the public. Here's an eye-opening fact: in the national poll, only 26 percent of respondents knew that landfills contain liners.<sup>2</sup>







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## Identifying Supporters

When it comes to waste projects, a segment in the community will always be likely to support the project. However, this is meaningless without action. It is not sufficient to have generic support. A waste company must publicly demonstrate that support. Remember and heed the often-mentioned axiom: perception is reality.

Even with a perfect communication and outreach campaign, the opponents of a project will almost always outnumber the amount of supporters at public hearings. Supporters have less to gain relative to what opponents feel they will lose. Therefore, broad support does not form by itself. It takes dedicated outreach to achieve and sustain support.

Finding support for waste projects can be a formidable obstacle. It is critical to use adequate resources to maximize returns when attempting to identify supporters. The most effective avenue to identify supporters is through direct one-on-one interaction. This can take place in a variety of arenas: open houses, civic meetings and door-to-door canvassing. This method is time consuming but also affords the opportunity to persuade people.

## Phone Calls

The quickest way to identify supporters is with phone calls. A call center can contact thousands of residents in one night and ask a series of questions to identify possible supporters. The results of the calls can be used to rank residents into various tiers based on their level of support. Once supporters are identified, efforts can be made to turn passive supporters into engaged, active supporters.

## Informational Articles

A waste company can demonstrate broad community support by collecting articles of support, including petitions, letters to the editor, video testimonials, resolutions from nearby jurisdictions or civic groups, and letters and e-mails to decision makers. These items should be placed into the public domain as a demonstration of support.

In most instances, a coordinated on-the-ground presence is required to collect a sufficient amount of articles of support. Companies cannot sit back and expect supporters to find them. Savvy professionals understand that companies must generate action; they must make things happen. That is why it is necessary to proactively engage supporters at their homes. Companies must make it easy for residents to demonstrate support without leaving their front porch.

## Events

It is possible to bring some potential supporters to you. This can be accomplished with job fairs, informational sessions, home events and picnic receptions. However, it is unlikely that these events will generate an adequate amount of demonstrated support.

## Public Hearings

Public hearings are like Election Day. The entirety of the outreach plan revolves around the dates of public hearings (aka decision days). It is, of course, difficult to match the level of opposition at public hearings. Therefore, it is critical to turn out supporters for hearings, and to carefully orchestrate the

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meeting. Speakers should be given talking points to address and counter the opposition's arguments.

It is important to encourage all supporters to attend hearings even if they do not speak. Decision makers can quickly identify supporters if they wear matching t-shirts or lapel stickers. In addition to having supporters at hearings, a waste company can turn in petitions and letters from the community as an additional measure of community support.

## Building Community Goodwill

Outreach should not be limited to the initial approval process. It is always prudent to engage the public in ongoing outreach. As it becomes more difficult to site new waste facilities, there will likely be a greater focus on expanding existing sites. As a result, companies will need to expand their existing footprints in communities. Therefore, it is important to continue to build good will in the community. This can be accomplished in a few ways.

## Contributing to Community Causes

For starters, it is always prudent to financially contribute to community causes. This is certainly a gesture that shows a commitment to the community. But there are other things that can be done: create a hotline for people to report issues, designate one person as the primary contact for neighbors, give tours of the facility to members of the community and have employees conduct community service.

## Creating a Web Site

Waste companies should consider the creation of a Web site for each community where they have a presence. The Web site can offer basic information about the facility including contact information. In addition, it can highlight the positive things the waste company is doing in the community.

## Newsletters

Another way to promote community involvement is with a quarterly newsletter. A representative from the waste company can deliver the newsletter by going door-to-door. This gives residents an opportunity to mention any problems that need to be addressed. This proactive communication will result in a positive track record for the waste company.

## Planning and Outreach

The approval of any waste facility is an uphill battle. It is foolish to think otherwise. But with ample planning and coordinated outreach, waste companies can charge up the hill towards victory. **WA**

*Daniel Larrison is the founder of Ashton Strategies (Tampa, FL), a national firm that puts boots on the ground and provides public relations strategies and tactics to generate support for development projects, ultimately driving revenue for clients. As an expert in land use advocacy, Daniel secures approval for controversial development projects by conducting community outreach. Daniel has demonstrated winning success in a wide array of sectors, including substantial experience in the waste industry. Over the course of his professional career, Daniel has implemented full-time campaigns for political campaigns, ballot initiatives, corporations and a national business association. His experience includes grassroots campaigns in more than 30 states. Daniel can be reached at (888) 699-9515, e-mail [dlarrison@ashtonstrategies.com](mailto:dlarrison@ashtonstrategies.com) or visit [www.ashtonstrategies.com](http://www.ashtonstrategies.com).*

## Notes

1. Survey conducted by Ashton Strategies.
2. Ibid.

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## The Invisible Spotlight: Your Priorities Are their Priorities

Craig Wasserman and Doug Katz

**Your employees are constantly watching your behavior watching for clues to what's important and what isn't. In order to change your staff's priorities, WORK BEGINS WITH MANAGEMENT.**



### MARVIN IS A SUCCESSFUL DISTRICT MANAGER FOR

a medium size metropolitan hauling company. When our consulting relationship began, I asked him what the secret was to his team's track record. Being a humble man, he attributed it to many things—the talent of his subordinate managers and their employees, the support of his bosses, the culture and policies of the company, the loyalty of his customers.

When I pressed him about his own role in the district's success, he cited three things: (1) his commitment to keeping his employees well informed, (2) his belief in soliciting and using his employees' ideas and (3) the obligation he felt to teach his managers how to be capable, respected leaders.

That's why Marvin was mystified by the growing tension among his department managers. He knew conflict is an unavoidable part of a busy, customer-driven organization. And he knew the holiday season is always particularly stressful for his district. But none of this really explained it, and he couldn't put his finger on the causes. All he knew was what his eyes and ears were telling him. For example:

- Out of the blue one morning, he heard his Operations Manager rudely deny a request from the Accounting Manager within earshot of a group of drivers

- Marvin was in one of the maintenance shops when his normally unexcitable Maintenance Manager complained out on the floor about having been kept in the dark on a routing change that disrupted his department's tightly controlled PM routines

- Marvin passed by a group of employees whispering among themselves about the Sales Department's spotty performance while the group's own manager stood by without intervening.

Other signs of friction were more subtle but unmistakable.

### The Puzzle

Marvin called in each of his department heads to get a handle on what was going on. He was concerned, he was disappointed, but more than anything he was puzzled. He began each meeting with questions:

- Had the Operations Manager realized he had an audience of drivers when he so abruptly dismissed the Accounting Manager's request? What had gotten under his skin to be so cantankerous in the first place? Could he have handled the situation more privately?

- Had the Maintenance Manager's outburst solved the problem or just agitated his colleague and his own staff? Weren't there more professional ways to communicate his displeasure and make sure the oversight wasn't repeated?

- Did the Support Services Manager who overheard her employees badmouthing the Sales Department intend to do something about it? Did she understand that unchecked complaints like that are destructive for the entire district? In what way could she have stepped in?

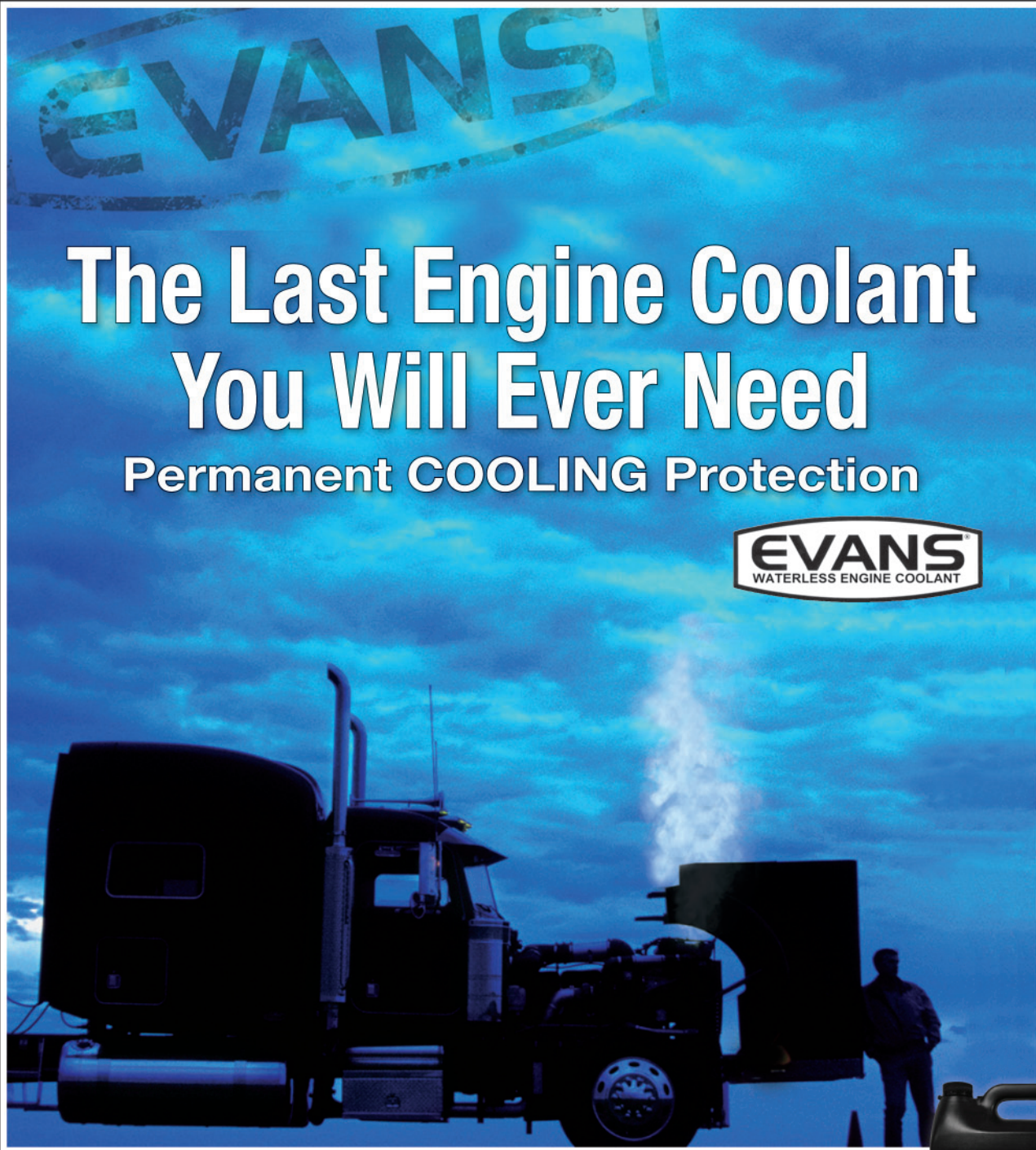
These conversations all went down the same path. Each manager was at first defensive, but ultimately regretful and each apologized. While it was satisfying that his managers didn't want to let him down, Marvin remained disturbed that they were oblivious to their real-time impact and unsure how to respond more constructively.

As Marvin and I discussed the situation, he realized that his managers were focused almost exclusively on their own departments. The relationships between departments were simply not a priority for them. As a result, they were fumbling the interactions and the handoffs, paying short shrift to how critical these are to the organization's internal goodwill and operational effectiveness.

### The Mirror

From that insight forward, Marvin was way ahead of me. He turned his questioning mind on himself before I could, acutely aware that district priorities began with him. He knew he was the one who established the tone; his words and deeds defined the expectations. So he began to ask himself what he was doing to foster the inter-department problems he was trying to solve. Here's what he came up with:





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## The Invisible Spotlight: Your Priorities Are their Priorities

- In his staff meetings, one-on-one meetings, and casual tours through the district, Marvin always steered the discussion to each department's productivity measures, morale and plans. He could not recall ever focusing on why or how the departments coordinated their efforts or jointly solved problems.

- When he congratulated an individual or a department, it would be for a contribution within the silo. He never praised managers or line employees for their responsiveness to other departments or the support they provided to other areas of the district.

In other words, although Marvin preached cooperation across the district in broad rhetorical terms at quarterly meetings, his day-to-day words and actions invariably emphasized the primacy of the individual departments. He was virtually silent on the importance of collaboration. It stood to reason that his managers were doing nothing more than following his lead. They were following the compliments. It's what we all do.

## The Fix

In the days and weeks that followed, Marvin began asking his managers a different kind of question as he made his rounds. Did you get the Sales Department's input on this change? You'll need the support of Maintenance on this—how will you get it? Which other departments will you need to coordinate this with?

Marvin felt the glare of the invisible spotlight as he changed gears. The department heads were soon comparing notes on his new emphasis. Eventually they were anticipating his questions, focusing on his expectations and engineering a more collaborative, integrated organization. They held Marvin

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in high esteem and wanted to please him.

Over time, the improvements presented opportunities for Marvin to recognize and reinforce his managers' successes. And the gradual change in his managers' strategies began to transform staff priorities in turn. It became a positive spiral.

When I met Marvin again, almost a year after this episode, I asked him what he thought the secret was to shifting the culture of his district. Right on cue, he told me it was many things—the talent of his subordinate managers and their employees, the support of his bosses, the culture and policies of the company, the loyalty of his customers. But this time I knew better. This time I knew Marvin himself was at the center of the change.

Marvin understood the invisible spotlight. He understood that his employees were watching his behavior ... watching for clues to what's important and what isn't. If he wanted to change his staff's priorities, he knew the work would have to begin with him. | **WA**

*Craig Wasserman and Doug Katz have been consulting to managers and organizations for 35 years. Over that time, they've worked extensively with the waste industry. You can reach them at [cw@wassermankatz.com](mailto:cw@wassermankatz.com) and [dk@wassermankatz.com](mailto:dk@wassermankatz.com). This article was adapted from their book, *The Invisible Spotlight: Why Managers Can't Hide*, available on [www.amazon.com](http://www.amazon.com). For more information, visit [www.invisiblespotlight.com](http://www.invisiblespotlight.com).*

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## Gasplasma®: Revolutionizing the Waste-to-Energy Landscape

Rolf Stein

**The critical status of WASTE MANAGEMENT CAPABILITY, COUPLED WITH THE URGENT NEED TO DEVELOP SUSTAINABLE ENERGY SOURCES, HAS OPENED THE DOOR to the opportunity for waste-to-energy technologies to take center stage.**

### WASTE MANAGEMENT REMAINS A CRITICAL ISSUE

in the UK and Europe. Each year, Europe produces around 3 billion tons of waste—equivalent to 6 tons per person. Currently, 67 percent is either sent to a landfill or incinerated. Neither of these solutions is an ideal means of dealing with waste and there is a pressing need to develop and deploy more effective and efficient waste management technologies as alternative solutions. Much of the emphasis to date has been on producing less waste in terms of recycling more and consuming less. While this target should be strongly supported, in order to encourage more sustainable consumption patterns for the future, recycling cannot solve the whole problem, especially as Europe's population continues to rise at a rapid pace.

At the same time, the landscape for energy generation in the UK and elsewhere is shifting. With carbon-heavy, exhaustible fossil fuels generally in decline, the hunt is on for efficient, clean, consistent energy sources that can fill the gap. The government has ambitious renewable energy targets to be met, with 15 percent of all energy to come from renewable sources by 2020 and CO<sub>2</sub> emissions to be cut by 34 percent from 1990 levels by

2020 and by 80 percent by 2050. Europe also looks set to legislate for binding emission reduction targets.

There is increasing recognition amongst policymakers for the need to promote innovation in renewable technology development. For example, there is a growing awareness of innovative advanced conversion waste-to-energy technologies that can generate an efficient, consistent energy supply while also contributing to the UK's and Europe's vision for a zero waste economy. The potential for waste to be treated as a resource is an opportunity that needs to be realized, especially when the requirement for effective and sustainable waste management solutions has never been greater.

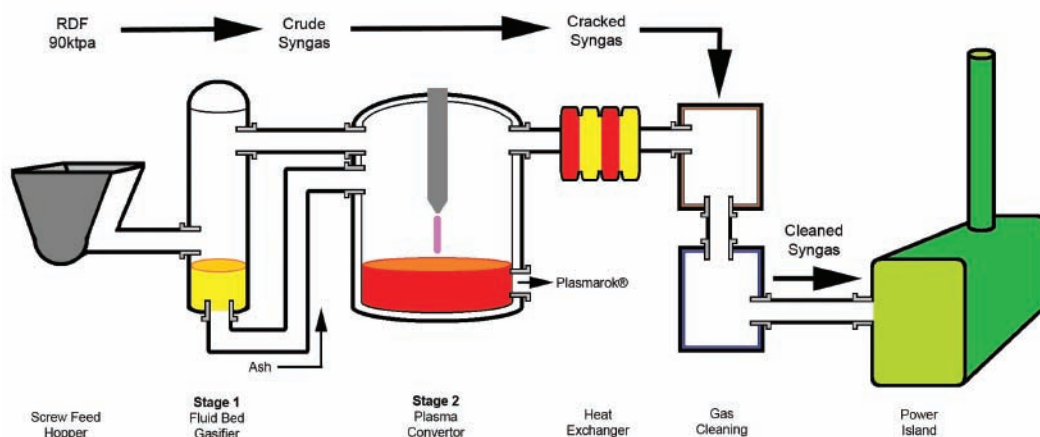
### The Gasplasma® Process

One such solution is Gasplasma. The core Gasplasma technology is a two-stage advanced conversion technology. It combines two long standing and well-proven technologies (gasification and plasma conversion) in a unique configuration to convert municipal and commercial waste into a clean, hydrogen-rich synthesis gas (syngas) and a vitrified recycle product called Plasmarok®, which can be used as a high value construction material.

A full Gasplasma plant comprises four main sections: 1) a waste reception hall and materials recycling facility (MRF); 2) the core Gasplasma technology consisting of the Fluidized Bed Gasifier and Plasma Converter; 3) gas cleaning equipment to cool, clean and condition the syngas; and 4) a Power Island to generate renewable power and recover residual heat.

The waste reception hall can typically accept 150,000 tons of municipal solid or commercial and industrial waste per year. The waste is first sifted to remove any oversized objects. The remainder is then put through an MRF to recover any metals, glass and hard plastics, before the residue is shredded and dried to make around 90,000 tons of refuse derived fuel per year.

### Gasplasma® Process Flow Diagram



A process diagram of Gasplasma. Images courtesy of Advanced Plasma Power.





Swindon, UK plant.

The next stage comprises of a Fluidized Bed Gasifier that transforms the organic materials in the refuse derived fuel into a crude or unrefined syngas; this is done at a temperature of around 800°C in a controlled reduced oxygen environment. The syngas produced by gasification contains condensable tars, making it unsuitable for use in efficient gas engines or gas turbines.

The crude syngas is then passed into a separate, secondary Plasma Converter. The intense heat from the plasma arc—in excess of 8,000°C—and the strong ultraviolet light of the plasma ‘cracks’ the condensable tars and other longer chain organics into a clean hydrogen-rich syngas. The bottom ash from the gasifier, containing mainly inorganic elements, is vitrified into a product called Plasmarok. This is a mechanically strong and extremely leach resistant material with multiple applications (in contrast to the bottom ash arising from other thermal waste processes).

The syngas is then cooled, cleaned and conditioned through conventional wet and dry scrubbers (to remove any acidic components) before being used directly

in a Power Island, consisting of reciprocating gas engines or gas turbines, to generate renewable power, which can be fed directly into the electricity grid. Residual heat is also recovered from the process to be used in CHP mode within the plant itself as well as for other users in the vicinity.

### Key Benefits

The Gasplasma process has a number of advantages from an environmental, social and economic perspective. Environmentally, the process delivers high overall energy efficiency, maximum combined heat and power potential, minimal generation of secondary residues and very low plant emissions. Further, the process produces a high-value construction material called Plasmarok that is recognized as a product not a waste. This removes any environmental, regulatory and commercial risk stemming from concerns over the eco-toxicity of bottom ash.

The Gasplasma process facilitates resource optimization as it enables almost

### LANDFILL MINING IN ACTION

Advanced Plasma Power (APP) is putting this very concept into action at the landfill site of Remo Milieubeheer NV in Houthalen-Hechteren, Belgium, where APP and global waste management firm Group Machiels have embarked on a pioneering project to convert some 16 million tons of landfilled waste into recyclables and clean energy. In the period of reclamation, the waste will be processed through APP's Gasplasma plants, producing power for the local community and heat for nearby greenhouses to grow vegetables.

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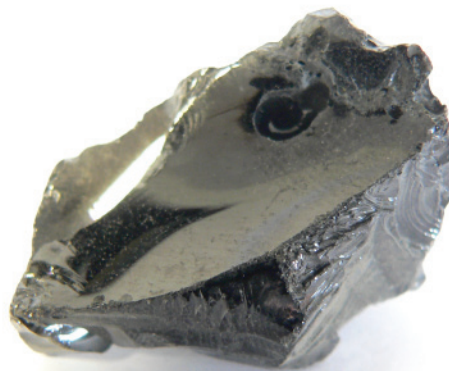


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Plasmarok, the vitrified recydate product generated from the process.

complete landfill diversion and is complementary to recycling. The process can be used in conjunction with existing recycling schemes, since it takes waste that cannot be recycled and uses it to produce energy; thus maximizing the use of waste as a resource.

From a social perspective, a full-scale Gasplasma plant is around 15m high, meaning that it can fit into a standard warehouse similar to the kind used for out of town business parks. This means a plant can be located, unobtrusively, on the edge of a town, taking waste from that town and supplying power and heat in return—a local, community solution to local waste management challenges and sustainable energy requirements. This can all be achieved at a cost that compares very favorably with other thermal waste treatment technologies, especially on a lifecycle analysis basis.

### Widespread Applications

The two products from the process, the energy-rich syngas and the Plasmarok have a variety of end uses, making the technology very flexible. The syngas can be used to generate electricity directly and efficiently in gas engines or gas turbines. As fuel cell technology advances rapidly, the syngas will be capable of being used commercially in fuel cells, thereby further improving electrical generation efficiency. Alternatively, the syngas can be processed into synthetic natural gas (SNG) for distribution in existing gas grids or into hydrogen or liquid fuels.

### Landfill Mining: A New Concept

The concept of recuperating a landfill site opens up a whole spectrum of opportunities especially as our primary sources of materials and fuels become ever more depleted. Furthermore the sites themselves, around which in many cases populations have grown, can be returned to developable land or parkland with amenity value (see **Landfill Mining in Action sidebar, page 35**). There is huge potential for the concept of landfill mining to be applied in the UK, with 2 billion tons of waste sitting in landfill sites around the country. The potential to claim back large areas of developable land is also significant.

### A Real Opportunity

The critical status of the UK's waste management capability, coupled with the urgent need to develop sustainable energy sources, has opened the door to the opportunity for waste-to-energy technologies to take center stage. The efficiency, key benefits and rationale that underpin processes such as Gasplasma mean that there is a real opportunity for the UK to work towards a zero waste economy while delivering on renewable energy generation targets. | **WA**

*Rolf Stein is CEO of Advanced Plasma Power, Swindon, UK. He has worked in the plasma industry since 2006. Prior to his appointment as CEO of APP, he was COO for the company. He joined APP as Commercial Director with a particular focus on securing and commercializing the company's intellectual property portfolio. For more information on APP, contact Kate Colclough, Marketing Manager, at [kate.colclough@app-uk.com](mailto:kate.colclough@app-uk.com) or visit [www.advancedplasmapower.com](http://www.advancedplasmapower.com).*





## Rethinking Your Safety Committee

John Wayhart

**ZAC 'em up and run 'em like a business.**

### **EVEN AT THE RIPE AGE OF 10, WE WERE PRACTICING**

safety leadership through one of the most sought after positions in school—crossing guard. Each day, we wore our sash proudly, as we moved our fellow classmates to and from school safely. Never did we imagine that years later that same job would continue to play a pivotal role not only in the waste industry, but also in all other manual labor businesses. Now, I know what you're thinking; we don't really walk our employees across the parking lot or waste site. Nevertheless, the main responsibility of crossing guards—to keep the student body safe so they can return home to their families—still holds true with companies today. Only now, we are responsible for the livelihood of fellow employees.

In our industry, the crossing guard role has transitioned into membership of a company's safety committee. These teams are often comprised of both labor and management personnel who discuss the rules and best practices for safety in an effort to prevent occupational injuries and illness.

### **Wearing the Badge**

As discussed in previous articles centered on Zero Accident Culture (ZAC), the key attribute for a successful safety committee lies in leadership. Management's role is to create and energize a vision for the company that is persistent in the prevention of workplace injury. A Company Safety Mission Statement should be signed by the owner and senior executive team that clearly communicates the expectations of the safety committee during meetings, as well as the work day, in order to provide a safeguard against common risks found in the waste industry.

Furthermore, the chairperson of this group needs the owner's support and must become a catalyst for safety within the organization. The selection of this person is critical to successful implementation. This type of responsibility should be delegated to a person experienced with operational strength and someone who is an existing or future member of the senior leadership team.

**“The role of **LEADERSHIP** is to select the right goal and then drive the organization toward it by every means available.”**

—Paul O'Neill, Alcoa Board Member and former Secretary-Treasurer

### **Missing the Mark**

Most waste companies have safety committees in place. However, many times, the strategy and focus behind these groups are rarely visionary and typically center on maintenance items, such as housekeeping, DOT/OSHA compliance and convening after a workplace injury to remit blame.

If your company is going to spend the money on assembling five to seven experienced employees as members of the company's safety committee, then create the dynamics within this group to reach and impact 100 percent of the workplace. Otherwise, these meetings are ineffective, uninteresting and can actually negatively impact your company culture because incidents are still occurring.

When visiting with one of my clients—a Midwest waste facility—I observed one of their safety committee meetings to provide guidance on improving the strategy and team agenda. While at the meeting, I noticed that not one of the senior executive team members were in attendance. Understanding the importance of leadership in propelling the safety team forward, I intervened and designated two company executives and a chairperson to attend each meeting and provide their expertise and insights on industry hazards. Having the senior team attend these meetings each month held the rest of the organization to a greater level of accountability and resulted in a 25 percent decrease on their overall insurance program.

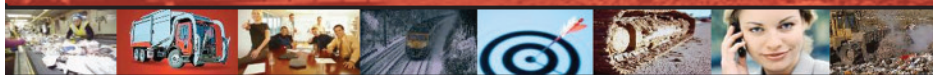
Owners expect a long-term return on investment, like the case just mentioned, when implementing safety





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committees. However, these expectations can only be met if the committee and chairperson are strategically selected and can rely on the support and expertise of the leadership team. Owners and senior management can anticipate lower insurance and operating costs if the committee in turn conducts consistent safety trainings to improve efficiency and awareness.

### ROI = ROI

Your Return on Investment is equal to your Reach of Influence. But, what is your safety committee's Reach of Influence? How many people does the safety committee really impact? Right now, it might be 5 percent of your workforce and all the way up to 25 percent on a good day. Why stop there though? Go for the gold and start thinking about attaining a 100 percent Reach of Influence (ROI). How do you make 100 percent a reality? Implement the following steps:

- Generate a Company Safety Mission Statement for workplace excellence
  - Select a committee chairperson that has the leadership skills, drive and vision necessary to enforce proper safety precautions
  - Elect committee members that represent each department or group of people within the organization
  - Communicate to the entire workforce the company's goal and objective for workplace safety, as well as announce who the members of the safety committee are along with their responsibilities
- Ask every employee to become a part of the safety committee somehow or in some way:
- Encourage attendance at an upcoming safety committee meeting
  - Implore employees to present solutions to their safety committee representative
  - Motivate employees to become part of the solution
  - Demand results from their safety committee representative

The safety committee should function first and foremost as a preventive force against known hazardous situations. The magic of visualizing where potential hazards may exist and preventing loss in advance of an injury can result in an extremely high ROI. After identifying these risks, the committee must then become an advocate for safe employee practices.

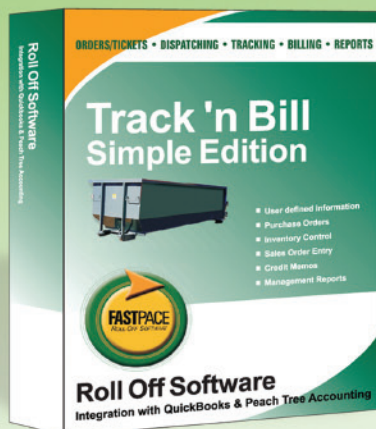
### Looking Both Ways

Committee members should envision their role as agents of change and take on the core responsibility of scrutinizing the Injury/Incident Review and Near Miss Process. This means that when a worker is injured or has a near miss, the committee is proactive in speaking with him or her and carefully analyzing all of the hazards and

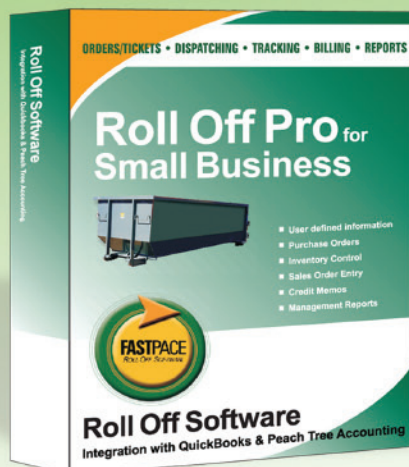


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## Rethinking Your Safety Committee

risks associated with the incident. It is important to figure out what happened, when, how and why. Instead of casually discussing the event, understand the root cause of the loss so that the likelihood of reoccurrence is eliminated.

Here are some objectives for committee members to consider:

- Create a positive safety culture that encourages everyone's responsibility toward achieving a Zero Accident Culture
- Provide clear communication about the safety committee's actions and solutions
- Identify existing or potential unsafe acts and conditions in and around the workplace
- Identify root causation of loss and communicate the lesson learned to prevent reoccurrence
- Celebrate success

## Establishing Goals

Great companies separate themselves by the specific and direct goals that they set and their drive to attain them. Here are some goals for the safety committee to consider:

- *Lower Experience Modification Factor*—seek out minimum XMOD
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Your company can yield a combined ROI of at least 25 percent in the previously-mentioned goals with a strong safety foundation that is backed by leadership, employee support and strategic goals. | **WA**

*John Waybart is a Senior Vice President at Assurance (Schaumburg, IL). With more than 29 years in the insurance and risk management industry, his expertise lies in providing solutions for a wide range of businesses including the waste and recycling industry. In 1989, John trademarked the Zero Accident Culture® and continues to teach, coach and mentor this process to help drive down the cost of risk to improve operational effectiveness and financial results. John can be reached at (847) 463-7161 or via e-mail at [jwaybart@assuranceagency.com](mailto:jwaybart@assuranceagency.com).*

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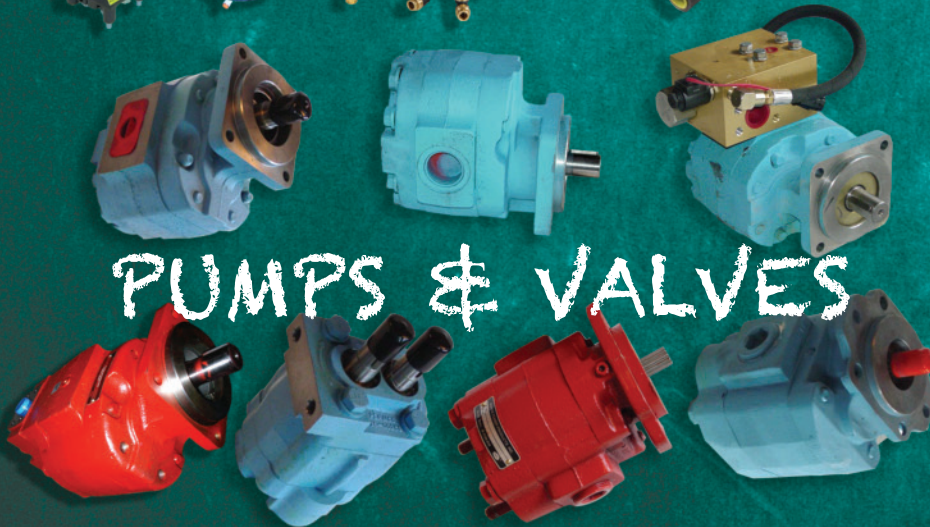
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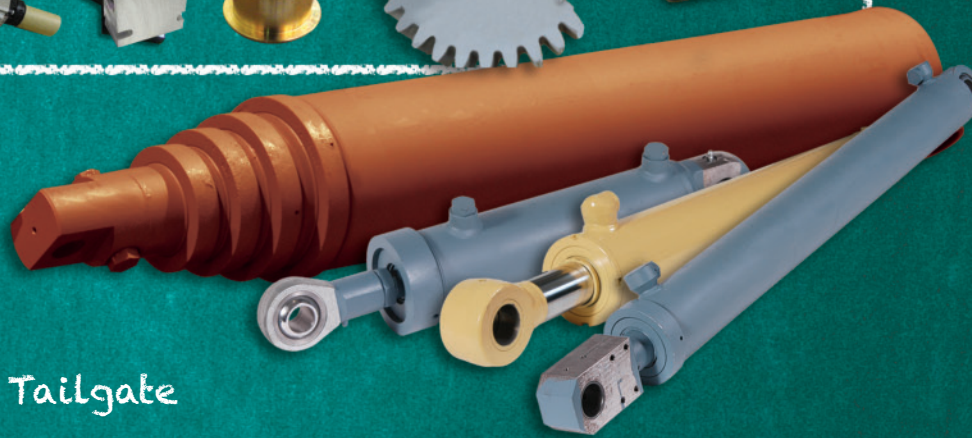
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Goodyear created this tire in response to market demand for a robust product for challenges presented by spread axle use. The new G619 RST will help fleets achieve optimal performance and tire life. The tire is currently available in size 295/75R22.5 in Load Range G. Three new sizes—11R22.5, 11R24.5 and 285/75R24.5, all Load Range G—will be released during the second quarter of 2012. **FOR MORE INFORMATION, VISIT [WWW.GODYEARTRUCKTIRES.COM](http://WWW.GODYEARTRUCKTIRES.COM).**

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**NEWWAY GLOBAL ENERGY, INC.** (Johnson Creek, WI), founded as a sister company of JWR, Inc., a national waste and recycling equipment management company, announces its fully functional proof-of-concept demonstration unit. NewWay Global Energy has partnered with Alliance Global Conservation to provide fully functional pyrolysis gasification waste-to-energy plants throughout the U.S. and the rest of the world.

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## Recycling

# The Importance of Recycling Software

Matthew Walsh



**NEW RULES AND REGULATIONS ALONG WITH STRICTER ENFORCEMENT** are impacting recycling businesses which, up until now, have remained loosely regulated. This trend has recyclers dealing with increasingly restrictive guidelines created by state and county legislators, risking huge fines and the possibility of being shut down.

For the last 50 years recycling professionals have found their customer bases increasing exponentially. In the U.S. alone, within one year, scrap metal processors handle about 47 million tons of scrap iron and steel, 1.5 million tons of scrap copper, 2.5 million tons of scrap aluminum and 10 million tons of scrap vehicles. It is no doubt that the increase in industrial growth over time coupled with the recently slowed economy has helped to precipitate this boost in the number of people dealing in scrap metal. However, as a result of these tighter regulations and people stuck in desperate economy, recyclers are quickly finding themselves on the wrong end of law enforcement.

## Growing Theft

With scrap theft growing, legislators and law enforcement officers are stepping up their efforts to prosecute thieves and penalize or even close the yards where they sell these stolen materials. In some areas, law enforcement is requesting daily purchase records from scrap material handlers. Unfortunately, most recycling centers find that they are non-compliant with legal regulations and are unable to provide officers with the requested information. Although law enforcement officials cannot legally require documentation to be provided to them without the presence of a warrant, complying with the local officials is the most sensible option. Software exists on the market to aid recyclers in becoming fully compliant and eliminating the possibility of fines and/or forced dissolution of a non-compliant scrap yard. Advanced record keeping software is now becoming more of a requirement rather than an option as the laws change to combat scrap theft.

Most States require pictures of scrap materials to be taken at the time of purchase, as well as electronically capturing fingerprints, signatures, driver's licenses, a photo of the seller, license plates and a description of the seller's vehicle, regardless of the material type. Generally, ferrous-materials are lower on the legal totem pole, but transactional information is still required to be

available in the event that the materials are stolen. Some States have less strict rules regarding these requirements, but as time progresses, more and more states are moving towards a unified set of rules which will govern recyclers.

## Scrap Vehicle Purchases

Perhaps one of the largest issues that law enforcement investigates is in reference to stolen vehicles. Each State has different guidelines with what information is required to be reported to them about scrap vehicle purchases; some States have no reporting requirements whatsoever. Regardless of State reporting requirements, the federal government requires that motor vehicles

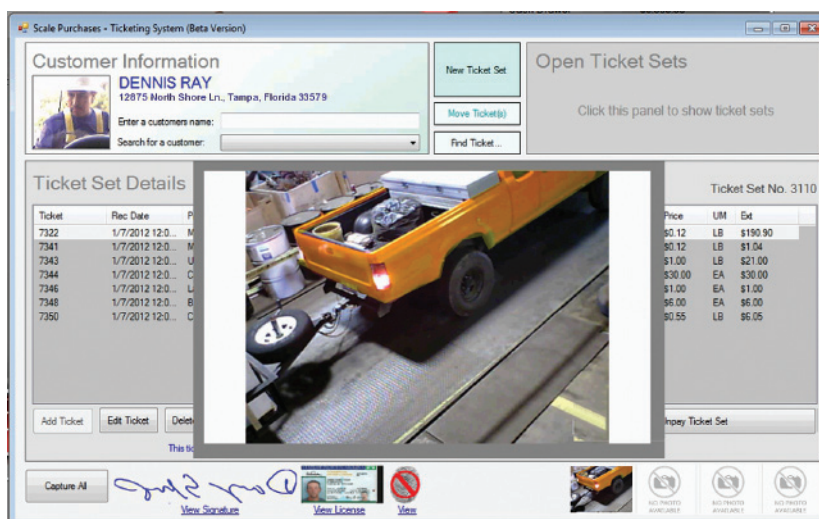
that are purchased and intended for scrap must be reported to the National Motor Vehicle Title Information System (NMVTIS) ([www.nmvtis.gov](http://www.nmvtis.gov)) as a way to protect consumers from fraud and decrease vehicle theft.

Recyclers that do not report vehicles to NMVTIS face a maximum penalty of \$1,000 per unreported automobile (49 U.S.C. § 30505(a)). Penalties depend on a number of assessments but the main factors are the size of the business and the gravity of the violation. Recyclers could lose up to 50 percent of their gross profits for not reporting vehicles to NMVTIS. Most compliant recycling software handles NMVTIS reporting automatically

eliminating the risk of federal non-compliance.

## Laws and Regulations

Ohio requires daily scrap purchase information to be reported to LeadsOnline.com, a resource used by police and government officials to track stolen materials and arrest those responsible for the theft and sales of those materials. Tampa, FL has recently imposed a law requiring all daily scrap purchases to be reported to the Business Watch International, which can be used to track materials back to the buyers and sellers of the items. These reporting guidelines are only found in about three software packages found on the market. Because each State and even each county is different, it may be important to pay attention to those details as laws are enacted regularly and the government is under no obligation



Automated photographs of vehicles, scrap loads and customers can quickly and easily provide law enforcement with details descriptions and other necessary information they need to catch scrap thieves. Photo courtesy of Aeon Blue Software.



to notify anyone of the change. It is the responsibility of recyclers to research their local laws. ISRI members are notified of laws as they change, non-ISRI members can use online resources such as [www.scraplaws.com](http://www.scraplaws.com).

States will undoubtedly continue to create legislation to protect people from scrap thieves, as well as to regulate recyclers. These regulations will continue to target how scrap metals are received by the yards. Recyclers should have computer software installed that has the ability to track their scrap purchases and keep a constant inventory of their scrap materials, as well as the ability to track the purchase back to the person who sold it while retaining all required methods of identification.

One thing is for certain: the rules that govern recyclers are here to stay. As technology advances, more and more areas will begin requiring stricter guidelines to abide by. Local and state governments are quickly adopting a 'be compliant, or else' attitude towards the scrap metal industry. It is a good idea to get compliant, and go "above and beyond" the expected requirements of the law as many states are following in each other's footsteps. | **WA**

*Matthew R. Walsh is President and Lead Software Developer for AEON Blue Software & Development (Tampa, FL). He is an expert computer specialist and programmer who has developed enterprise-level software for GM, Ford, Chrysler, BMW, Lamborghini/Audi and Mercedes-Benz. Aeon Blue Software is the developer of the Nexus software package for recyclers. Matthew can be reached at (813) 333-1112 or visit [www.NexusRecycle.com](http://www.NexusRecycle.com).*

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## Landfills

### Zooming in On Bird Control

John Ghan

#### BIRD CONTROL FOR AIRPORTS AND LANDFILLS OFFER A SIGNIFICANT CHALLENGE

because of the fact that these areas offer a great source for birds to eat, roost and not have natural predators in the area. Landfills are regulated by the EPA and in some instances, the FAA when located within six miles of an airport. It is well known that birds, more specifically gulls, are feeding at landfill sites throughout the world. Their numbers are constantly increasing and they have become regular visitors to landfill sites where they find not only food, but also water and a place to nest and/or roost. Their presence creates problems in many ways. Their control is particularly important for the health and safety of both employee's onsite and the surrounding residents. Their concentration is not only hazardous to aircraft, but there have also been two new studies from Portugal and the largest infectious-disease conference (ICAAC) in the U.S. that have shown that samples taken from seagulls harbor bacteria that is resistant to antibiotics and carry the E. coli bacteria. This is very troublesome as they are able to fly thousands of miles and are often seen at beaches, restaurant parking lots and landfills.



Jack Cooper, Bye Bye Birdies' Partner, at the Newby Island landfill.  
Photo courtesy of Bye Bye Birdies.

There are different types of seagulls in the U.S., from the less aggressive laughing seagull found on the east coast to the very aggressive California seagull found on the west coast. Seagulls, in particular, are beautiful in flight; however, they are proving to be more of a problem than once thought. The CA seagull in the Bay area has grown 33 fold and there are currently more than 36,000 seagulls in the area. Scaring them away is a full time job as there are always new birds that come into the landfill.

#### Case Study

**The Newby Island Resource Recovery Park of Republic Services in the San Francisco, CA bay area has served the public for more than 80 years.** Their landfill is located next to a federally protected wetland. They are always working towards additional recycling and are part of the "Green Power" (renewable energy that provides the highest environmental benefit). Newby Island Landfill has always worked to keep the seagulls off of the working face of the landfill for safety reasons and because it is not a natural food source for the birds. Newby Island initially used a falcon program which was very expensive and used a lot of pyrotechnics for bird control. They decided to look for an alternative solution. After Bye Bye Birdies performed a three-day demonstration for the landfill last July, they decided to purchase a remote control bird system from the company. Bye Bye Birdies located in Springfield, MO and Lucas, KS offers an eco-friendly bird control system that specializes in bird abatement control for large open areas. The main part of the system is a 7' R/C (remote controlled) eagle using quiet brushless motors, rechargeable Li-Poly battery's and is built to withstand actual flying for more than six hours a day. It is made from EPP plastic which is so tough it can withstand a car driving over the wing without any damage.

After the three-day demonstration, Newby Island Landfill saw not only the effect the R/C eagle had on the birds, but they also saw the significant cost savings since the cost of the system and paying an R/C pilot are considerably less than the cost of a falcon program. Training is available to learn to fly the remote controlled birds, do maintenance and learn to make repairs, or Bye Bye Birdies can provide an experienced remote control pilot who lives in your area. Republic Services chose to have an experienced R/C pilot from the area fly the R/C eagle. Their pilot is also training some of their staff to learn to fly.

Since implementing Bye Bye Birdies, Newby Island Landfill has not only saved money from the falcon program, but they have also cut down on the amount of pyrotechnics being used each day. The results to date have been varied, but the staff is confident that with more time, the program will prove even more effective. They agree that Bye Bye Birdies is on the cutting edge of bird control. The real test for any new system is time. Newby Island is using kites, pyrotechnics and the R/C eagle for bird abatement. Newby Island is currently interested in implementing Bye Bye Birdies at another landfill that is currently using a falcon program to not only save money, but also for the overall success of the program.



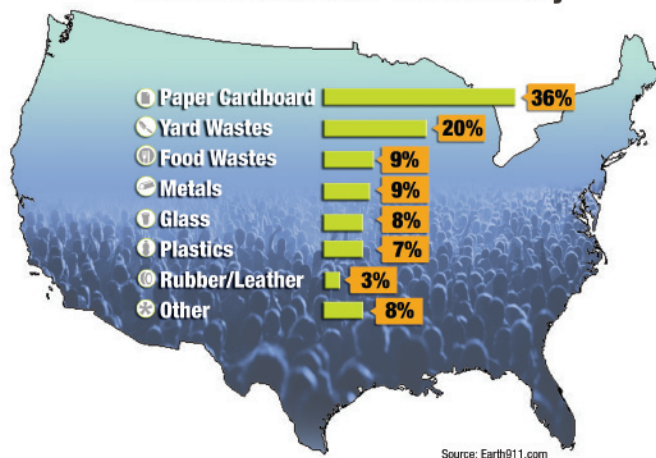
## Remote Controlled Eagles

Almost all bird deterrents currently offered work until the birds become acclimated to the different devices. However, all gregarious birds (flocking birds) have a natural fear of predators. The most effective form of bird removal is by mirroring what takes place in nature. Currently, the most effective form of bird control is using live falcons. The problem is they cannot be flown when molting, during strong winds or rain and can't herd the birds in a certain direction. Several raptors are required to ensure that one is available to fly when needed. They require feeding, housing and constant care, and the cost of such aspects can be very high.

On the other hand, a remote controlled eagle, with an identical and natural raptor-shape, acts on the "Fear Gene" in their brain to help push gregarious birds not only to a hurried escape, but it also induces them to not come back to an area considered dangerous. A remote controlled eagle can fly anytime and for a lot less money. The R/C eagle is easy to manage, service, is always ready to use, can redirect the orientation of escaping birds to a predetermined location and is capable of scaring all species of birds.

For example, the laughing seagull will stay away for 15 minutes to an hour after flying the remote controlled eagle for just a few minutes. The aggressive California seagull will require flying the remote controlled eagle more often. The remote controlled eagle will keep the California seagull at bay for three to 30 minutes depending on factors such as if the landfill is located next to a body of water, the amount of food available to them and the size of the working face. If there are more than 10,000 gulls the R/C eagle may need to be flown for hours each day. In addition, keeping birds from landing can detour them from coming back as long as the eagle is in the air as they expend so much energy waiting for the R/C eagle to leave.

## What Americans Throw Away



The R/C eagle can be operated either for tactical purposes (immediate and complete bird dispersal) or strategic purposes (maintaining an area clear when no birds are present). An R/C eagle works best when it is integrated with other bird abatement techniques such as pyrotechnics, kites, streamers and sound devices. Every landfill location needs a different approach for bird control. From using the R/C eagle for an hour per day up to flying several hours per day, the best approach is to weigh your options, then call for an evaluation and a possible demonstration. | **WA**

*Jon Ghan is CEO of Bye Bye Birdies (Springfield, MO). He can be reached at (843) 902-9910 or via e-mail at [info@ByeByeBirdies.net](mailto:info@ByeByeBirdies.net). For more information, videos and press releases, visit [www.ByeByeBirdies.net](http://www.ByeByeBirdies.net).*

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## Resource Spotlight

### The Coalition for American Electronics Recycling

#### THE COALITION FOR AMERICAN ELECTRONICS RECYCLING REPRESENTS

U.S. companies that believe electronics recycling should be performed securely and sustainably, for the benefit of the American economy. They are committed to growing an American industry with the capacity to manage the volume of e-waste generated within our borders, creating good jobs and expanded trade. This Coalition of independent businesses was formed in summer 2011 to demonstrate to Congress that businesses do support the passage of the Responsible Electronics Recycling Act (HR 2284/S1270) because it will promote fair and expanded trade in electronics commodities, while allowing American recyclers to rationalize new investments in plant and personnel necessary to legitimize and grow an American industry. Represented by Rep. Raymond Green (D-TX), the act calls to prohibit the export from the U.S. of certain electronic waste, and for other purposes.<sup>1</sup> The Coalition is a grassroots, membership-driven organization of like-minded businesses that is not associated with any other professional organization. They have come together with the purpose of passing the Responsible Electronics Recycling Act.

#### How You Can Get Involved

This is an important and urgent issue, with the potential for quick Congressional action on these bills. No matter who you are, the Coalition encourages you to get involved in any number of ways:

If you are from an American electronics recycling business that supports our position:

- Learn more about the facts and our position on these bills
- Sign up as a member to lend your support to our cause
- Write to your elected officials in Congress and urge them to support these bills
- Visit with your Members of Congress or join the Coalition on future fly-ins to Washington, DC
- Host a tour of your responsible American electronics recycling facility to your elected officials to help educate them on this issue.

If you are from another constituent group and want to show your support for this legislation, get involved by:

- Learning more about the facts and asking questions
- Writing or visiting with your elected officials to take action
- Showing your support for responsible American electronics recyclers by using the Coalition for your recycling needs. | WA

—[www.americanrecycling.com](http://www.americanrecycling.com).

As of  
**February 2012**,  
there are  
**53**  
member  
companies  
operating over  
100 facilities  
in more than  
32 states, plus  
the District of  
Columbia.

#### Note

1. [www.govtrack.us/congress/bill.xpd?bill=h112-2284](http://www.govtrack.us/congress/bill.xpd?bill=h112-2284)



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## TUFFMAN

### Stationary Trommel Screens



**WWR Tuffman Model 722**

This unit is a NEW Tuffman Model 722 Stationary Trommel Screen powered by a 10 hp, 3-phase electric motor with a 25 to 1 gear reducer. Trommel barrel is 22' long x 7' diameter with 2" screen openings made of .20" wire mesh. Mounted on a heavy-duty frame with 4 support legs at a 5 degree slope. Has Controls. One year warranty.

**\$44,500.00 USD**



**WWR Tuffman Model 618**

This unit is a New Tuffman Model 618 Stationary Trommel Screen powered by a 10 hp, 3-phase electric motor with a 25 to 1 gear reducer. Trommel barrel is 18' long x 6' diameter. Comes with option of 1", 2", 3" or 4" screen openings made of .250" perforated steel plate. Mounted on a heavy-duty frame with four support legs at a 5 degree slope. Has controls. One year warranty.

**\$49,500.00 USD**



**\$88,000.00 USD**



#### WWR Tuffman Model 722-P Portable Trommel Screen

This unit is a Tuffman Model 722-P Portable Trommel Screen powered by a hydraulic drive motor driven by a diesel engine. Trommel barrel is 22' long x 7' diameter with 2" screen openings made of .20 inch wire mesh. Screen barrel is at a 5 degree slope. Also include 10' long x 42" wide infeed conveyor with infeed hopper. Removable hitch and adjustable jacks for altering pitch of the trommel. Mounted on a single-axle trailer with electric brakes. Has Controls. One year warranty.



## Networking Government Gone Viral

Cathleen Chavez-Morris

**SOCIAL NETWORKING SITES HAVE SPREAD THE POPULARITY OF MOVIES,** music and videos on a pandemic “pop culture” scale. Solid waste managers should consider using the popularity of these sites to spread information about solid waste programs within their municipalities. These tools can be used to spread information about particular solid waste campaigns, beneficial public programs or general education about solid waste issues. Although there are many social networking sites that can be used for the purpose of promoting solid waste programs, Facebook and Twitter have been useful tools in promoting solid waste programs in the city of Los Angeles, CA.

### Maintaining a Virtual Presence

Municipalities have an obligation to maintain a public presence in the communities that they serve. An extension of that obligation is fulfilled when municipalities maintain a virtual presence online through a Facebook page. Facebook is used by members to update friends on their personal status. The City established a Facebook page for the Multifamily Residential Recycling

Program in August 2009 and it currently has more than 900 fans receiving weekly status updates on solid waste programs, such as mobile hazardous waste drop-off events, composting education workshops and clarification on acceptable blue bin materials. Every time a fan logs on to their Facebook account they can view a list of status updates from friends and fan sites, including the Program’s Facebook status. Additionally, when a member requests to be a fan of the Program’s Facebook page, their friends are notified about the connection to the Program. Furthermore, fans are encouraged to leave their comments and suggestions on solid waste on the Program’s Facebook page. City staff answer submitted questions that can be viewed by the public on Facebook. The Program’s current fan base includes union representatives, local and state elected officials and media reporters.

Twitter allows users to post real-time short messages of 140 characters to individuals following their “tweets”. Although there is some overlap of users following Facebook and Twitter, the City has synched the Program’s Facebook page to automatically copy status updates and submit them as tweets on the



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Program's Twitter account. Followers can also "retweet" or "RT" what was posted by City staff for their own followers. This allows a tweet to be viewed by potentially twice as many people through retweets. Followers can also submit tweeted questions to the City by starting their tweet with "@larecycles". When the Los Angeles Times recently started following the Program's tweets, the Program became one of 19,000 Twitter users the newspaper is currently following daily.

### Complementing Traditional Approaches

Although social networking sites can be helpful tools to invigorate a solid waste marketing program, it is not intended to fully replace the benefits associated with advertising on traditional media outlets like print, television and radio. However, it can complement traditional marketing approaches by reaching audiences that prefer to receive information digitally. More importantly, it shows that municipalities are using the same viral marketing techniques that private industry has already found extremely successful. | **WA**

*Cathleen Chavez-Morris is presently Program Manager for the City of Los Angeles, CA's Multifamily Residential Recycling Program. This program provides citywide source-separated recycling services to rental and owner occupied multifamily residential properties. In addition to free weekly service, the program provides blue bins for the storage of recyclables and educational materials for residents. She also manages a \$2.3 million grant awarded to the City by the California Department of Conservation. Cathleen's professional experience includes employment with the Lower Los Angeles and San Gabriel Rivers and Mountains Conservancy, California Department of Toxic Substances Control, California Air Resources Board and United States Geological Survey. She can be reached at (213) 485-3752 or via e-mail at [cathleen.chavez@lacity.org](mailto:cathleen.chavez@lacity.org).*

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- Loading time
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- Turnaround time

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**21ST CENTURY PROGRAMMING** (Long Beach, CA), designers and distributors of ROM, ROM Express, ROM Recycler, ROM Brokerage and ROM Enterprise, announces the official launch of ROM for iPhone. The mobile app is compatible with software versions: ROM, ROM Brokerage, and ROM Enterprise with use of the ROM Web Connectivity module. iROM gives recyclers access to all their data from dashboard level summaries to individual transaction history on the road, right from their phone.

ROM for iPhone is an extension of the desktop software program, Recycling Operations Manager (ROM), developed by 21st Century Programming. iROM functions as a management application and allows recyclers to review data stored on their facility's server from anywhere in the world. Users can access accounts receivable, accounts payable, sales order balances, purchase order balances, sales and purchase information, open shipments, open receivers and customer contact info. With iROM, users don't just get an overview of transactions in progress, but can drill down to specific order details with material photos and up-to-date balance information. Users of iROM can also view open scale tickets in both shipping and receiving.

The smart phone application is made safe and secure with the requirement of a user name and password and a four-digit pass code. The iPhone application allows access to the data stored on the user's server; no data is actually stored on the iPhone. A robust security system controls who has access to what data, with the capability of limiting users to seeing only their customer's data. ROM for iPhone also incorporates Google mapping to allow the user to look up a customer contact's address and direct them to their destination, as well as one-click dialing.

**FOR MORE INFORMATION, CALL (562) 981-1030 OR VISIT [WWW.21STCENTURYPROGRAMMING.COM](http://WWW.21STCENTURYPROGRAMMING.COM).**



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