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ADVANTAGE MARKETPLACE!
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www.wasteadvantagemag.com May 2012 Vol.3, No.5

WasteAdvantage

magazine

The Advantage in the Waste Industry

PLANNING EFFICIENT BALE ROUTES AND PROCEDURES

CRAGCO, INC.:
**TAKING PRIDE
IN WHAT THEY DO**

PLUS:
**Recycling/Transfer
Stations/Landfill Section! Page 43.**





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Editor's Note



AS EACH MONTH GETS WARMER, WE HERE AT *WASTE ADVANTAGE MAGAZINE*

are taking the weather in stride and working on not only putting out great editions, but also attending upcoming conferences and trade shows that will help us discover new developments in technology and best practices. It is always exciting to read some of the new ideas that come into the waste industry and we love to be at the forefront of these tremendous and innovative changes.

Our May issue features some great articles, including "Fall Protection for RCVs" (page 21), which stresses that waste companies should evaluate their trucks and trailers for adequate fall protection. In addition, "Rail Yard Operations Best Practices" (page 25) focuses on communicating with the railroad and tracking your railcars, while "Discomfort and Change in the Invisible Spotlight" (page 28) talks about managing change head on rather than avoiding it. And don't forget to check out this month's R/T/L section which features "Planning Efficient Bale Routes and Procedures" (page 44), which discusses embracing recycling technology, particularly when it comes to bale inventory, routing and diagnostic tools.

For anything that you've missed in past issues, be sure to visit www.wasteadvantagemag.com for latest digital editions, archives, up-to-the minute news, original articles and more. If you have an ideas, comments or questions, don't hesitate to contact me. I am always happy to discuss.

Best Regards,

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Fall Protection for RCVs

Although falls from the top of RCVs are not commonplace, the severity of injuries resulting from falling off the top of a truck or trailer is often very serious, if not fatal. Front loaders, rear loaders with reeving equipment and transfer trailers all should be evaluated with fall protection in mind.

SHANNON HARROP

25 Waste-by-Rail

Rail Yard Operations Best Practices

The key to rail yard best practices requires an integrated operating approach that includes tracking and inspecting empty and loaded railcars, communicating proactively with the railroad, evaluating current and desired operational and physical yard characteristics, and employing electronic billing.

DARELL LUTHER

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Discomfort and Change in the Invisible Spotlight

Some degree of discomfort sets the stage for change. The trick is not to avoid it but to manage it head on.

CRAIG WASSERMAN AND DOUG KATZ

32 Zero Accident Culture

Starting School for Waste and Recycling: New Employee Orientation

As an owner or manager, it is integral that you act as a teacher and remind both the new hire and your employees of the rules and provisions of the company, including those for safety.

JOHN WAYHART

**Scan Now.
Read Later!**



On the Cover:

Professional drivers and strict safety standards are key factors for an efficient bale route operation.

Photo courtesy of Cardinal Logistics Management Corporation (Concord, NC).

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Photos courtesy of Tod Craggs, Tealinc. and tarpARMOR.



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Bob Marino Joins People's United Equipment Finance Corp.

PEOPLE'S UNITED EQUIPMENT FINANCE CORP. (Houston, TX) is extremely excited to announce that they have been joined by Robert "Bob" Marino, a veteran of the waste and environmental equipment finance industry for 35 years. Marino's expertise will allow them to expand their continuing service

to the solid and liquid waste industries, which People's United Equipment Finance Corp. has proudly served since 1989.

For more information, call (855) 344-2224.

WAYNE ENGINEERING (Cedar Falls, IA) announces several new additions to its sales staff and plans for a parts distribution center. Tom Nigbur, the new General

Sales Manager for the Arizona and New Mexico territories, will be managing the new parts distribution center located in the Phoenix valley along with new truck sales. Tom comes to Wayne with 40 years of trucks sales experience and has spent the last 22 years representing the Heil product line. Ed Grubb, the new Great Lakes Regional Sales Manager, worked for McNeilus in truck and parts sales for 10 years before owning and operating his own hauling company, Falcon Sanitation in Lancaster, OH, where he resides. Matt Malm, the new Midwest Regional Sales Manager, has more than 20 years of sales, marketing and promotional experience. Finally, Corrie Betts has been hired as a Parts Saleswoman based in the corporate office. Her addition will offer superior service for Wayne customers.

For more information, call (319) 266-8207 or visit www.wayneusa.com.

Madera County, CA, Selects GBB for Solid Waste System Review and Procurement

GERSHMAN, BRICKNER & BRATTON, INC. (GBB) (Fairfax, VA) announces that it has been selected by Madera County, CA, to perform a third-party review of the County's solid waste system, provide recommendations for improvements, and assist with a procurement process, including an RFP, evaluating proposals and assisting with negotiations. The County recently decided to terminate its contracts for solid waste collection in the unincorporated areas below 1,000 feet and operations of the Fairmead Landfill, Mammoth Materials Recovery Facility, household hazardous waste facility and North Fork Transfer Station. As a result, GBB will assist in the fast-tracked strategic plan development and procurement process for a new contractor in order to ensure a cost-effective operation.

For more information, call (800) 573-5801 or visit www.gbbinc.com.

Labrie Enviroquip Group Hires Skip Berg

Skip Berg has joined LABRIE ENVIROQUIP GROUP (Saint-Nicolas, QC) as the National Sales Manager. Known as a tireless contributor to the waste industry, Skip has served on the Board of Trustees of WASTEC, as a Trustee for DCA, and on the Board of Governors for EIA. Berg previously held the position of Sales Manager and Director of Business Development for Labrie from 1998 to 2008. Since that time, he has been the President of Environmental Strategies LLC, a sales management and strategic planning resource for the waste and recycling industries.

For more information, call (800) 463-6638 visit www.labriegrup.com.

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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

4 – 6: Illinois Recycling and Waste Management Conference and Trade Show

Clock Tower Hotel and Conference Center
Rockford, IL
www.illinoisjointconference.com

11: NSWMA Minnesota Chapter 19th Annual Trash Can Open

Green Haven Golf Course
Anoka, MN
www.environmentalistseveryday.org

12 – 13: Waste Conversion Congress East Coast

Radisson Plaza-Warwick Hotel
Philadelphia, PA
www.renewable-waste.com/waste-conversion-east

19 – 20: Biogas USA East and Midwest

The Mid-America Club
Chicago, IL
www.greenpowerconferences.com

21: NSWMA Indiana Chapter 17th Annual Trash Can Open

Twin Bridges Golf Club
Danville, IN
www.environmentalistseveryday.org

19 – 22: Air & Waste Management Association 105th Annual Conference and Exhibition

San Antonio Convention Center
San Antonio, TX
www.fivesenses.com/ee6

24 – 26: 2012 Summer Conference

Sawgrass Marriott
Ponte Verde, FL
www.swanafl.org

JULY 2012

13 – 17: National Association of Counties (NACo) Annual Conference and Exposition

David L. Lawrence Convention Center
Pittsburgh, PA
www.naco.org

17: Carolinas Chapter Meeting

Mid Pines Inn and Golf Club
Southern Pines, NC
www.environmentalistseveryday.org

18: Carolinas Golf Tournament

Mid Pines Inn and Golf Club
Southern Pines, NC
www.environmentalistseveryday.org

25 – 27: Pennsylvania State Recycling Association's 22nd Annual Conference

Lancaster Convention Center
Lancaster, PA
www.proprecycles.org

AUGUST 2012

14 – 16: WASTECON 2012

Gaylord National Resort and Convention Center
Washington, DC
www.wastecon.org

26 – 29: APWA International Public Works Congress & Exposition

Anaheim Convention Center
Anaheim, CA
www.apwa.net

28 – 29: Resource Recycling Conference

Hilton Austin
Austin, TX
www.resource-recycling.com/rr_conference/index.html

SEPTEMBER 2012

11 – 12: 2012 NSWMA Southeast Annual Conference

Renaissance World Golf Village Resort
St. Augustine, FL
www.environmentalistseveryday.org

16 – 18: Waste-to-Fuels Conference & Trade Show

The Mystic Marriott Hotel & Spa
Mystic, CT
www.waste-to-fuels.org

17 – 19: World Solid Waste Congress 2012

Florence Congress Center
Florence, Italy
www.iswa2012.org

18: 2012 NSWMA Heartland Annual Conference

Quartz Mountain Resort
Lone Wolf, OK
www.environmentalistseveryday.org

25 – 26: 2012 NSWMA South Central Annual Conference

Hyatt Regency Hill Country Resort
San Antonio, TX
www.environmentalistseveryday.org

30 – October 3: 2012 Global Waste Management Symposium

Arizona Grand Resort
Phoenix, AZ
www.wastesymposium.com

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WasteAdvantage Magazine May 2012 **11**

Government Gossip



NIOSH Releases Factsheet on Solid Waste Industry

NIOSH has released a factsheet on the solid waste industry (Waste Management and Remediation, NAICS 562) that consists of three groups: collection, treatment and disposal, and other waste remediation services. In 2010, approximately 478,000 workers were employed in the solid waste industry with about 355,000 in private industry. About 72,500 of the private waste industry employees are classified as Refuse and Recyclable Materials Collectors (SOC 53-708) and 49,000 of these collection workers are employed by local government agencies. Occupational traumatic injury fatality data for 2003 – 2009 have been published for public and private sector workers but occupational injury and illness data for this period are available only for private sector workers. Effective health and safety programs, which include hazard recognition and controls, can reduce occupational injuries and illnesses and improve work conditions in the solid waste industry.

For more information, visit www.cdc.gov/niosh/docs/2012-140.

Sharon Kneiss Named as New President/CEO of Environmental Industry Associations

Sharon H. Kneiss has been selected as the new president and CEO of the Environmental Industry Associations (EIA), following the retirement of Bruce Parker, who will be stepping down later this year after 30 years of successful and dedicated service to the industry. The selection of Kneiss follows an extensive executive search of candidates to lead the trade association that represents the private-sector solid waste services industry and its two sub-associations, NSWMA and WASTEC. "We are pleased to announce that Sharon Kneiss will be leading

the EIA effective June 1 and will bring significant insight and knowledge to our industry," said EIA Chairman Charlie Appleby—who also serves as chairman and CEO of Advanced Disposal Services, Inc. headquartered in Jacksonville, FL. "The CEO of EIA is the face of our environmental industry, and having the right person to fill the position upon Bruce Parker's retirement is critical," said Appleby. "The solid waste and recycling industry, including its equipment manufacturers, provides a vital service that impacts each and every person and business in this country. The needs of our customers and the development of new technologies are changing at light speed. We knew we needed someone who can readily grasp the impact of those changes and navigate the halls of Washington and the various States, as well as respond to the needs of our membership. I am confident that we found that person in Ms. Kneiss."

In addressing her appointment, Kneiss said, "I am pleased and honored to take the helm of EIA, representing the industry whose services keep our communities clean, protect the public health, enable and promote recycling, integrate new technology and provide renewable energy. I look forward to representing the industry, working with its membership and working with the various governmental and non-governmental stakeholders to promote the industry's good work."

For more information, visit www.environmentalistseveryday.org.

OSHA revises Hazard Communication Standard

To better protect workers from hazardous chemicals, OSHA has revised its Hazard Communication Standard, aligning it with the United Nations' global chemical labeling system. The new standard, once implemented, will prevent an estimated 43 deaths and result in an estimated \$475.2 million in enhanced productivity for U.S. businesses each year. The Hazard Communication Standard, will be fully implemented in 2016 and benefit workers by reducing confusion about chemical hazards in the workplace, facilitating safety training and improving understanding of hazards, especially for low literacy workers. OSHA's standard will classify chemicals according to their health and physical hazards, and establish consistent labels and safety data sheets for all chemicals made in the United States and imported from abroad.

The revised standard is expected to prevent an estimated 585 injuries and illnesses annually. It will reduce trade barriers and result in estimated annualized benefits in productivity improvements for American businesses that regularly handle, store and use hazardous chemicals, as well as cost savings of \$32.2 million for American businesses that periodically update safety data sheets and labels for chemicals covered under the standard.


For more information, visit www.osha.gov.

EPA to Allow 15 Percent Renewable Fuel in Gasoline

EPA approved the first applications for registration of ethanol for use in making gasoline that contains up to 15 percent ethanol—known as E15. Ethanol is a renewable fuel that can be mixed with gasoline. For more than 30 years, ethanol has been blended into gasoline, but the law limited it to 10 percent by volume for use in gasoline-fueled vehicles. Registration of ethanol to make E15 is a significant step toward its production, sale and use in model year 2001 and newer gasoline-fueled cars and light trucks. To enable widespread use of E15, the Obama Administration has set a goal to help fueling station owners install 10,000 blender pumps over the next five years. In addition, both through the Recovery Act and the 2008 Farm Bill, the DOE and U.S. Department of Agriculture have provided grants, loans and loan guarantees to spur American ingenuity on the next generation of biofuels.

For more information, visit www.epa.gov/otaq/regs/fuels/additive/e15.

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Cragco, Inc.: Taking Pride in What They Do

Specializing in construction waste, CRAGCO HAS GROWN FROM A ONE MAN OPERATION TO A FULL SERVICE COMPANY that has low turnover, practices money-saving strategies and is always looking for opportunities to grow.

CRAGO, INC. (RANSOMVILLE, NY) HAS A UNIQUE

beginning. After five years of working as a Cattle Manager at Martha's Vineyard (MA), owner Tod Craggs decided to make the journey back to his hometown in Ransomville, NY to be closer to his family. Taking a job at a local lumberyard, Craggs was delivering building material when he started to see the need for additional trash pickups. At the time, the local contractors were grumbling about the high prices and poor customer service with regards to trash pickup, so he decided to start hauling trash part-time after work with a dump trailer. "After about two years, in 2000, a storm chaser came in and we had quite a hailstorm here in Niagara Falls—a lot of roofing and siding was damaged so I bought four dump trailers to help clean up the damage," says Craggs. "After the storm, I had made enough money to buy a new ampliroll hook lift system for my used roll-off truck and three dumpsters, and the rest is history." Borrowing money against his family farm to get a full-time business started, he bought his first containers and started to establish his company.

Now, all of Craggs' energy is in Cragco, which has turned into a full-service construction hauling company specializing in residential construction debris removal, serving Niagara County, Orleans County, Erie County and part of Cattaraugus County in New York State. Cragco has grown from one truck to nine trucks and around 250 boxes in the last 12 years. "We do everything from small hauling jobs to large commercial work. We did most of the demolition in Buffalo for all of the schools and handled the total demolition of a 15-story old federal building," says Craggs. Although Cragco covers mostly construction waste, they also have dealt with industrial, non-hazardous waste. In addition, as the need arises, they haul recyclable materials to the appropriate facilities. "Although we don't have the permit to separate the recyclables out ourselves, if someone has a dumpster full of just wood, concrete, etc., we can take the waste to the designated recycling center. We are definitely into recycling and trying to save our landfills for the real trash. If it's possible, we do it," stresses Craggs.

The whole fleet of Cragco.
Photos courtesy of Tod Craggs.



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Owner, Tod Craggs, in front of a Western Star 60-yard roll-off truck.

Weathering the Economical Storm

Despite the economy's uncertainty, Cragco has been able to weather the storm by practicing some savvy money-saving strategies and, as a result, the business has grown 10 to 30 percent every year. "We had to think out of the box in order to save money. I've got really good people. Although we weren't able to give out much overtime, we did make it through hard times with no layoffs," says Craggs. Some of the huge cost-savings that the company does is to perform their own in-house repair, preventative maintenance and tire service. In addition, Craggs points out that he has recently purchased a tire called Duraseal from Goodyear that has saved him \$50,000 per year on tires. "I was spending quite a bit annually on tires because I ruined them in the landfills. This Duraseal tire is almost puncture resistant. It will take a puncture from a nail and keep on going. I was getting 14 flat tires per week, now I get maybe one per month out of the whole fleet," says Craggs. Averaging between 150 to 200 spotted containers on jobs per week in their busy season, the company also has a walking floor with a tractor and they offer mulch hauling for the local landscapers, as well as picking up recyclable material and reselling it. They also pick up trash for people that don't have the ability to do it themselves. For example, if there is a customer that needs a basement, attic or garage cleaned out, Cragco will come out and do it.

Because Cragco has been able to maintain and keep growing, the company doesn't have a large turnover. "I've worked for a lot of companies and I know how I was treated. I try to think of it as a family here. I look out for these guys and they look out for me," says Craggs. "They saw the worst-case scenario when the economy was crashing in 2009 and they wondered if they were going to have a job. I told them 'Just keep doing your job and I'll keep doing mine and we'll get through this.' It did get hairy there for a while but we made it through the hard part. When the chips are down for these guys, we look out for them; we provide medical and retirement." Craggs also doesn't hesitate to jump in the trenches with his employees, whether it is driving a truck to a job or going under one for maintenance. "I'm no better than they are. We are all a team here and we all respect each other. It's a very unique little deal we have and I am very blessed for it."

Craggs is quick to also make mention of his General Manager, Darla Zelakiewicz, who has helped Craggs run the business for the last several years. "My drivers make the money and Darla takes the pressure off of me. She manages this company like it's her own." He stresses that she is an important asset and key player in the company. Not only does she manage the day-to-day operations of Cragco, but she also dispatches every truck that goes out, does bookkeeping and accounting, and takes care of customer service issues. Says Craggs, "She does it all. Without her here, it would be brutal."

If the need does arise to hire new employees, Craggs ensures that they receive hands-on training by having them ride for two weeks with two or three of the company's leads in order to learn the etiquette and safety of Cragco, as well as what quality Craggs expects. In addition, all of the trucks are chipped with a GPS unit so Craggs knows exactly where they are, what their speed is, how long they've been sitting and what their miles were for the day. Serious about safety, he makes sure that it is discussed every morning and that a couple of times per week everyone talks about things that they have learned or are learning, something they've seen on the road and what needs to be improved. Says Craggs, "We have actually saved \$14,000 on our insurance by having the GPS—we showed them tapes of our drivers being safe. There's no way I could function in this company without the GPS. It has been a huge help. This year we shopped our insurance just a bit and we save an additional \$6,500. Not only that, but our current insurance company also put us into a safety pool which means that they are going to pay us to be safe up to 10 years. I am proud to say we have been accident free for the last 12 years—no major accidents or fender benders. When we receive bonuses from the insurance company, I am going to give it to the guys as a bonus."

Fuel Challenges

Every day has its certain challenges, says Craggs, but one ongoing problem they have dealt with has been the rising cost of diesel fuel. "The fuel has been a huge issue; it is volatile. When I started this business, we were paying \$0.89 per gallon and now it's \$4.40. We only get six miles to the gallon, so when you think about going 12 miles and it costs you 10 dollars, it's crazy. You really start planning your moves," says Craggs. "That's where the GPS comes in. Every truck has to have a purpose, you drop your container off, you have a container in the area that needs to be picked up, you know the exact mileage it's going to take you from the system. When you can learn how to do that effectively in this business, you are way ahead of the curve." Although this has been Cragco's greatest challenge, Craggs is not quite ready to make the switch to natural gas since he doesn't have the room on his trucks for the tanks that are required for the alternative fuel. "We are in the market for two new trucks this year and a local company has switched over to natural gas. The fueling station that was put in reached out and said if I bought a natural gas truck, I could fuel there, but I don't think the technology is there yet. Our little trucks really don't have the large capacity for the natural gas tanks unless we go to a larger truck. I want to do it; I just want to make sure that it works for me."

Company Pride

Craggs takes special care to have pride in what his company does and he translates that to not only his employees, but also to his equipment and trucks as well. "We haul trash; we don't want to look like trash. Sometimes we roll into a jobsite and the homeowner thinks it will be their worst nightmare because their driveway is going to be in ruins when we're done," says Craggs. "But we'll

show up in a shiny truck with a nice looking dumpster that has no holes, no rust, doesn't smell and is pleasant to look at (for being a roll-off container) and it speaks volumes about your company taking the time to keep your equipment maintained." Not only that, but when the job is done, the company will make a point to sweep underneath the dumpster when all of the equipment has been removed. That kind of care is also stressed back at the shop as well. All of the trucks are washed at the end of the week, everything is checked out thoroughly, and the containers are washed and maintained. They even do their own own painting. Craggs laughs that all the maintenance makes his guys crazy, but the shop is as clean as the trucks. As a result, Cragco was nominated for the Small Business of the Year Award in 2002 and in 2009 by HSBC and First Niagara banks, "They really liked what I was doing. You have to understand, I wasn't born into this business, I learned it through the school of hard knocks, on my own through trial and error. I was always taught pay your bills, don't overextend."



Cragco washes its Kenworth trucks every Saturday in order to maintain a clean appearance.

Craggs likes to give back to his own community as well. Raising cattle as a hobby, he owns a little farm in the area and donates beef to local food pantries when the need arises. Another charity he likes to donate to is Catch-A-Dream (out of Mississippi), an organization that grants wishes to terminally ill children whose desire it is to go on a hunting or fishing trip. "It is a great organization. Every year we give about \$3,500 for a child to hunt or fish. It is near and dear to me and I'm glad I provide for it," says Craggs. In addition, when the church calls him and says someone in the community can't afford a roof, Cragco will donate the containers for the job. The company just donated containers to a woman whose husband was killed in Iraq. She could not afford a new roof so some local contractors got together and put the roof on, a supplier donated the materials and Cragco donated the dumpsters. "We all took care of her," he says. "We also do that for veterans and for those that just have been on hard times. We all pitch in. Many of the local

businesses will do whatever we can do to help out. If everyone does a little bit, it doesn't hurt one person a lot."

Future Opportunities

For now, Craggs says although they are always looking for opportunity, the company's niche is what has made them so successful. Currently, he is looking



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Typical 15 yard container. One of the most popular sizes for cleanup.

to get his container count up to 300. “We can handle it with our truck fleet the way it is now. However, we don’t want to get too much larger; I don’t want to lose quality control on my service—everything is doing well. I have been blessed. I have the very best and safest drivers and I have a lot of people who

want to work for me. I covet who I have and I don’t want these people going anywhere.” | **WA**

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Fall Protection for RCVs

Shannon Harrop

Although falls from the top of RCVs are not commonplace, THE SEVERITY OF INJURIES RESULTING FROM FALLING OFF THE TOP OF A TRUCK OR TRAILER IS OFTEN VERY SERIOUS, IF NOT FATAL. Front loaders, rear loaders with reeving equipment and transfer trailers all should be evaluated with fall protection in mind.

CLIMBING ONTO A REFUSE COLLECTION VEHICLE IS

always a risky move, especially in rain, wind or snow. One misstep can cause a fall, leading to serious injury or death; yet, drivers and mechanics scramble onto their trucks regularly, whether to clear a cab shield, collect a dropped bag, tie down a tarp or perform maintenance.

Front loader vehicles are particularly susceptible to errant material collecting on top that requires drivers to climb to remove material spilled from overloaded containers. If left unchecked and not removed, this fugitive material may become airborne when traveling to the disposal site and result in a load securement violation for the driver, or worse yet, a motor vehicle accident for an unsuspecting driver trailing behind.

Now more than ever drivers find it necessary to make sure the top of their trucks are clear before traveling to the disposal site. With recent CSA changes, authorities strictly enforce load securement with a maximum 10-point penalty (the same penalty for the driver as possession of drugs, DUI or reckless driving). DOT has identified these violations as most likely to predict

future involvement in a crash and thus has assigned a value of 10. Most drivers will tell you that they are not comfortable climbing ladders and working at such height without being equipped with proper personal fall protection equipment.

Potential Injuries

Although falls from the top of RCVs are not commonplace, the severity of injuries resulting from falling off the top of a truck or trailer is often very serious if not fatal. Front loaders, rear loaders with reeving equipment, and transfer trailers all require access to the top for routine activities and each should be evaluated with fall protection in mind.

Potential injuries while working at height on these vehicles can result from 1) climbing up or down the ladder, 2) transitioning on or off the ladder, 3) falling from the top of the truck body or trailer and 4) falling into the hopper. All four of these potential mishaps can be mitigated by using a personal fall protection system designed specifically for the application.

Bi-LINE Fall Restraint. Photos courtesy of tarpARMOR.



IMPLEMENTING SOLUTIONS



tarpARMOR Fall Protection System.
Photo courtesy of tarpARMOR.

Veolia ES Solid Waste Inc. has introduced a fleet of 20 compressed natural gas (CNG) front loader trucks and eight CNG roll-off trucks to serve the Evansville, IN, area. The solid waste division of Chicago-based Veolia Environmental Services North America Corp. said in a news release that it also is launching a CNG fueling station in Evansville.

The front loaders are equipped with the tarpARMOR® Fall Protection System, including Bi-LINE Fall Restraint and safeMOUNT Ladder Assist. The fall protection equipment ensures safe access for drivers when cleaning the top of the trucks particularly around the CNG fuel tanks and valves. The mechanics use the system for routine maintenance and inspection of the CNG tanks. Both the front loaders and the roll-off trucks are equipped with Expandable Garbage Gear reaching tools to keep drivers on the ground and out of harm's way as much as possible.

The trucks also come with automated collection systems designed to increase efficiency, protect driver health and safety, prolong truck life and reduce emissions. Veolia said that the new trucks run about 15 percent quieter than trucks with diesel engines. "We're very pleased to be the first waste hauler to bring CNG technology to Indiana," said Jim Long, Veolia ES president and CEO. Veolia operates four CNG fueling stations and more than 100 CNG-powered refuse collection and support vehicles in North America.



Left to right: Jim Long, President and CEO, Veolia ES Solid Waste; Dan Elpers, General Manager, Veolia ES Solid Waste – Evansville; Mayor Lloyd Winnecke, Mayor of Evansville, IN; Richard Burke, President and CEO of Veolia Environmental Services North America; Mike Dougherty, VP Eastern Region, Veolia ES Solid Waste. Photos courtesy of tarpARMOR.

Photo courtesy of Veolia Environmental Services.

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Fall Protection Systems

Generally speaking, there are three categories of fall protection systems—passive fall protection, fall restraint and fall arrest. Each of these systems has been applied to RCVs with varying degrees of success.

Passive Fall Protection does not require the wearing or use of personal fall protection equipment. (Examples may include safety nets, guardrail systems or other means that protect an authorized person from a fall hazard.) A Fall Restraint System is a collection of equipment components that prevents an authorized person from reaching a fall hazard. A Fall Arrest System is a collection of equipment components that are configured to arrest a free fall.

Added height and weight and lack of portability limit passive systems from effective application on mobile vehicles. Although collapsible handrail systems are available for some mobile applications such as tanker trailers, feasibility is limited on RCVs due to interference with hopper doors and lift arms, among other challenges.

Fall Arrest systems provide limited utility when applied to a vehicle, primarily due to the fact that the anchor attachment point for an arresting lanyard must be affixed at foot level on a truck. Most fall arrest systems have an anchor point overhead with adequate clear drop to decelerate and arrest a person falling. Trucks do not have enough height to allow proper deceleration. By definition, a fall arrest system will allow a fall—including over the edge of the vehicle or into the hopper. Limitations in height on a truck allow the user to fall over the edge and strike the side of the vehicle.

Fall Restraint systems are designed to prevent falls from over the edge of the vehicle or into the hopper, yet allow complete hands-free access to the entire working surface of the top of the vehicle. A properly designed Fall Restraint system possesses a simple geometry that is inherently scalable to accommodate various heights of users.

One example of Fall Restraint System is designed specifically for RCVs. It consists of two parallel restraint lines that are permanently mounted to the top



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Fall Protection for RCVs

of the vehicle body, a unique dual lanyard connects to the restraint lines and a comfortable work positioning belt is worn by the operator. Once the operator reaches the top of the vehicle, he clips his belt into the system using a swivel hook on the lanyard. He is then able to walk the full length and width of the vehicle, while being prevented from going over the edge or into the hopper. This type of system can be specified on new vehicles or retrofitted to those already in the field. Its low profile also protects it from tree branches and other obstructions.

Climbing and Reaching

Climbing the ladder to reach the top of the vehicle creates the greatest exposure for a misstep. The transition point from the ladder to the working surface (and back down) is the most difficult point to navigate without assistance from handholds. A bolt-on telescopic hand rail extension allows the climber to remain in an erect posture while maintaining three points of contact all the way through the transition and back down. When not in use the device easily retracts out of the way next to the ladder.

Even though the nature of the job necessitates climbing at times, the best fall protection programs minimize the amount of climbing by doing as many tasks as possible with your feet firmly on the ground. Expandable reaching tools assist in many routine tasks and are foundational to effective fleet safety programs. These tools can be used to safely clean and maintain vehicles from

ground level. They may include expandable reaching poles that extend 8 to 12 feet that can be quickly fitted with various attachments, including a brush and scraper that can be extended to sweep front loader cab shields and safely clean tailgate seals without walking under a raised tailgate. It can also be used on rear loaders to clean the packing/sweep blade from a safe distance. Another attachment is a multifunction hook used to position tarps and secure bungee cords without climbing onto the truck. Mounting brackets are available to conveniently store the tools on the vehicle. In addition, an industrial-strength, five-foot long reaching gripper can be used to reach loose or bagged trash in areas that are normally inaccessible, such as behind the packing blade, or in high temperature areas of the cab shield and between the cab and body where there is a risk of fire if combustible material collects.

Fleet safety managers and operations managers have realized the inherent risks of climbing on top of RCVs for many years. Until recently, feasible solutions were not available for fall protection systems on these vehicles. The safety community within the solid waste and recycling industry has focused on delivering practical solutions for this long-known challenge to keep drivers and mechanics safe when working at height. The solutions that have been developed are evidence of a concerted effort to keep our employees safer on the route and in the shop. | **WA**

Shannon Harrop is Operations Manager for Southwestern Sales Company (Rogers, AR). He can be reached at (800) 427-9368 or via e-mail at sharrop@tarpARMOR.com.

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Rail Yard Operations Best Practices

Darell Luther

The KEY TO RAIL YARD BEST PRACTICES REQUIRES AN INTEGRATED OPERATING APPROACH that includes tracking and inspecting empty and loaded railcars, communicating proactively with the railroad, evaluating current and desired operational and physical yard characteristics, and employing electronic billing.

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the yard and once again they aren't spotted where you want them and the two container railcars you'd been expecting haven't shown up. You're frustrated because it never seems like the number and type of railcars you expect and what you get match up. Rail yard operations start with an expectation of when your railcars will show up and where they will get placed after they show up. The best way to affect the outcome on whether or not this will occur as you plan is to include the railroad in your plans.

Looking Outside Your Rail Yard

To ease the railroad into your planning efforts, begin by filing an OT-5—the process by which shippers or Lessee's register private railcars with a railroad—for each private railcar you plan to run on their line. Once cars are accepted within OT-5, start tracking the railcars assigned to your service. If your cars are private cars, you already know what railcars you should be receiving and the key is now to figure out when you're going to receive them. If the cars you are

receiving are railroad pool assigned or one-time movement assigned railcars, obtain the information from the railroad when you place your railcar order and trace the railcars from where they are currently at to your site.

Tracking railcars in today's electronic commerce environment is a fairly easy task. Each Class I Railroad (BNSF, Union Pacific, Kansas City Southern, CSX and Norfolk Southern) offers access to their Web sites and the tools to track your railcars at whatever interval you deem necessary. You can use this information as it is presented on the railroad's Web site or download it to a spreadsheet or other integrated programs that can retain the movement data for more complete cycle time information.

Now that you've got a handle on the bigger picture of where your railcars are coming from and when and where they're going to, the next logical step is at the local level. Each railroad customer has a railroad serving yard. Out of that serving yard come the railcars required to meet your demand. In railroad terms this is not only the gathering and distribution network, but



Articulated bulk container railcars in classification yard. Photos courtesy of Tealinc.

Rail Yard Operations Best Practices

also the most challenging part of it. Planning at this level becomes critical. Many customers that we've talked with in our organization say, "I drove by my railcars for the past three days; it's only a mile away and the railcars still aren't here."

To remedy this challenge find out who your local trainmaster or yardmaster (person in charge of getting the right railcars on the right trains) is and communicate your requirements to him or her. Also find out the challenges that they face and how those challenges can be overcome by cooperative efforts. An example would be to coordinate daily service to best match train capacity on that particular day of the week, provided it meets your minimum requirements. Perhaps you can obtain the exact amount of railcars today to meet your loading requirements with guarantees for additional railcars the next day in lieu of having to order in more railcars than you need on a daily basis to compensate for railroad service delays. Matching up local train capacity to deliveries and pulls of loaded or empty railcars facilitates better yard operations within the overall railroad network.

The Interchange Inspection Process

Railroads have an obligation to provide you as a shipper (or receiver) with a railcar that meets the Association of American Railroads (AAR) Rules and Regulations. In particular, as stated in Rule 1 – Care of Freight Cars in the *Field Manual of the AAR Interchanges Rules*, each handling line is responsible for the condition of all cars on its line. There is also an obligation on your part as a receiver of an empty railcar to inspect it for AAR and Federal Railway Administration (FRA) defects and any "above the deck" damage that impedes the safe transport of your product.

AAR requirements are generally those items that concern the mechanical status of a railcar between couplers (couplers, draft, trucks, wheels, brakes, center sill, etc.) and below the deck. FRA requirements are generally those items that are focused on the safe operation of the railcar in interchange service. Such items as crossover platforms, handholds and reflective decals are examples of FRA areas of enforcement.

Above the deck is where most customers focus and where they should focus, just don't forget to check below the deck for running repair and safety appliance items. When focusing above the deck you're generally looking for holes in side



Inbound inspection of 110-ton waste container railcars.

and end sheets, doors that are open or not fully closed, hitches that are missing or container locks that are inoperable or missing.

Timing of these inspections is important. It doesn't mean that if you get a midnight switch from the railroad that you should have operations personnel on duty at midnight to perform the inspection right at that moment. What's important is establishing the process in advance of when you need the railcars for the next shift so you can either fix what's necessary or reject railcars right away without clogging up your yard. We find that without this process in place railcars that are not suitable for loading get placed in the way of other railcars required for loading, thus creating more handling and consuming time than if the process were done in the first place.

Keep in mind that if a customer receives a private railcar with AAR/FRA defects, the customer is still responsible for making needed repairs or billing the railcar to a repair shop regardless of whether the railroad delivered it that way or not. If the customer receives a railroad owned/operated railcar with defects, the customer should reject the railcar and contact the railroad for a replacement railcar.

Yard Design and Operations

We have yet to find an ideal rail yard operating configuration. There's always something that you'd change to get better use out of your rail yard. Most rail yards are originally designed to accommodate shipment requirements that were in effect years and sometimes decades ago. That usually means that there is less track in the yard than ideal or the configuration is not ideal for the current situation. In either case the answer is an operational study of requirements to best determine current requirements that have bolt-on capabilities for future development.

In our experience, ladder track configurations are ideal for single railcar to small multiple unit railcar shipments and loop tracks are more conducive to high throughput situations. In the waste business the business levels or loading and unloading configurations rarely justify the expense and land footprint requirements to support a loop track.

Regardless of your physical yard configuration, there are some important characteristics of a yard's operation that make it conducive to operational efficiency. The first is a yard operations plan where daily, day of week or volume related alternatives are designed into the operational plan for your yard. Which empty railcars go where and when and which loaded railcars are pulled and placed and when is a simple summary of an operational yard plan.

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Facilitating smooth yard operations communication and visibility are key elements to efficient and safe operations. Radios with dedicated frequency to rail operations and no obstructions to visibility or operations are important.

Loading and unloading locations and configurations should also be analyzed for safety, efficiency and design. Paramount to well run loading and unloading operations is the ability for the operator to have a clear visible field of the railcar they are unloading. This often requires more advanced equipment that elevates the operator above the railcar. Reaching over a railcar with blind spots or simply "feeling" your way around to unload the product often creates expensive railcar damage, leaves excess product in the railcar and is a safety hazard. You are trying to effectively unload a railcar here not pin the tail on the donkey!

Railcars should be loaded as effectively to full visible capacity. Oftentimes, this requires a scale mechanism of some kind, weighing inbound truck capacity, bucket or grapple scales or ideally a railcar scale in the yard. In many cases, railcars will cube out with commodity before they weigh out. Tamping product into railcars to obtain a final desired weight isn't a good operating practice. This ends up destroying railcar structural integrity and creates safety hazards not only in the yard, but also on the route the railcar is shipped. Remember your responsibility to safety doesn't stop within your rail yard. If you find that your railcars cube out before weighing out, communicate this to whoever is responsible for your rail fleet management. It's often an economic decision within a company weighing costs against transport rate benefits.

Electronic Billing

The railroads are big proponents of conducting commerce via electronic data exchange. Releasing railcars to the railroad which tells them when they're ready to be picked up, billing the railcars and settling freight bills electronically are all best practices standards. Railroads originated approximately 1.4 million carloads of commodity in February 2012. If you're not interacting electronically with the railroads on your railcars you're probably not going to get very good service.

Checklist

The key to rail yard best practices goes beyond the rail yard itself requiring an integrated operating approach by tracking empty and loaded railcars, inspecting those railcars (both empty and loaded) prior to moving them within your yard, communicating proactively with the railroad personnel responsible for providing service to your yard, evaluating current and desired operational and physical yard characteristics and employing electronic billing in all aspects of your operation. By doing all of the above in a safe efficient manner, you will be taking the first steps to a successful rail yard operation. | **WA**

Darell Luther is president of Forsyth, MT-based Tealinc Ltd., a rail transportation solutions and railcar leasing company. Darell has more than 24 years of rail, truck, barge and vessel transportation experience concentrated in bulk commodity and containerized shipments. He can be reached at (406) 347-5237, via e-mail at darell@tealinc.com or visit www.tealinc.com.

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Discomfort and Change in the Invisible Spotlight

Craig Wasserman and Doug Katz

Some degree of discomfort sets the stage for change. The trick is not to avoid it but to MANAGE IT HEAD ON.

THERE'S JUST NO WAY AROUND THE FACT THAT

speaking the truth to an employee about a misstep or oversight is a thorny business. The idea that you can criticize a person's work and at the same time keep him smiling is silly. It won't matter that your motives are pure, your approach constructive and earnest. If you have something unfavorable to say, you're going to trip the employee's security alarm.

And yet on this matter, contemporary management wisdom is infected with mythology and bad medicine. Over the past half century, we've embraced the idea that managers can handle conflict without anyone feeling pain. We ask managers to read books, watch instructional DVDs and attend training classes on how to achieve mutually satisfying "win-win solutions" through "open, empathic dialog" with their employees. We've somehow convinced ourselves that if only managers burnish their communication skills to a fine gloss, these

problems and deficiencies without causing any suffering. How comfortably the conversation goes becomes their measure of success. But here's the thing: contrary to popular belief, people don't change when they're comfortable. They change when they're uncomfortable.

The Compassion Paradox

When managers varnish the truth, they may avoid an awkward, prickly conversation, but they'll fix nothing. They'll improve nothing. And this is because they create no incentive, opportunity, or direction for change.

That's what tripped up Peter, a particularly kindly manager in a large full-service waste company. Peter believed he had to coat bad news to help employees swallow it. It's by far one of the most common misconceptions I see in my consulting work.

After a period of observation and mentoring, Peter concluded that one of his employees, Brent, was ill-suited to the technical work of his department. Brent had some wonderful attributes, but an objective, analytical mind was not one of them.

With his District Manager's encouragement, Peter arranged with the Director of Marketing and Sales to have Brent transferred to that department where his history in the community could be leveraged to strengthen customer relationships and cultivate prospects. He then met with Brent in the hope of securing his consent. As I mentioned, Peter was a warmhearted gentleman and didn't want to foist the transfer on Brent. He believed a sincere and supportive conversation would bring Brent to acknowledge his own deficiencies and see the wisdom of the reassignment. Peter wanted a meeting of the minds ... a happy ending.

Their conversation was civil, compassionate and comfortable. And monumentally unproductive. To Peter's surprise, Brent thought he was doing just fine in the department, thank you very much. He believed he was learning and contributing more and more with every passing day. He appreciated that Peter was offering an alternative but politely declined, insisting he enjoyed his present position far too much.

Peter was caught completely off guard by Brent's obvious misperceptions. He feared that challenging them would lower Brent's self-esteem (heaven forbid).



trying conversations can be comfortable. As if spin can be an analgesic for the pain of unflattering words.

Unfortunately, managers too often come away from these drills confident that they can discuss serious

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Discomfort and Change in the Invisible Spotlight

All Peter could think to do was repeat again and again how valuable Brent would be to the other department. Eventually and half-heartedly, Brent agreed to “think about it.” It was the only concession Peter could extract. The conversation that was supposed to make everyone happy ended in a state of muddy inconclusiveness.

Peter was benevolent but impotent. The premium he placed on cordiality and consensus obscured the message he needed to deliver. The worst part was that Peter’s “compassion” amounted to a grave disservice to Brent and to the organization. By creating the illusion of a choice, Peter misled Brent. In his attempt to spare Brent’s feelings, he created complications and confusions that delayed the transfer. It also frayed Brent’s nerves and his own and caused his superior to question his effectiveness as a manager. It was about as self-evident an example of the compassion paradox as you could ever hope to see.

I had been retained by the waste company as a management consultant during a period of corporate growth and accelerated management development. It was in this context that Peter’s District Manager asked me to meet with Peter to help get the matter back on track. Peter and I were no strangers to one other. Some time back, he had been denied a promotion that he believed he deserved. The powers that be at the time considered him a strong candidate but thought he needed more seasoning. He and I met for the first time while he was in the throes of that disappointment. He was annoyed and hurt by the decision but hung in, worked hard, and kept his eyes open for a second chance.

Now in a management role, he was paddling too carefully, making no waves. He knew his conversation with Brent had gone wrong, and he’d done some thinking about it. He explained to me that his “negotiations” with Brent had convinced him more than ever of the wisdom of a transfer. He knew it was up

to him to make it happen but couldn’t envision the best way to persuade Brent.

I asked him if he remembered how he felt when his promotion was denied. He smiled sheepishly. “I felt horrible.” I asked him how he got over it. “I moped for a while and then I just sucked it up and applied myself.”

“Did it turn out all right? Are you happy with where you are today?”

“Well until this, very much so!”

The point was made for both of us: Time is a great healer. Brent too would survive. I said, “It’s time for you to suck it up again and do your job! This isn’t a negotiation. It’s a management decision. And one you say you’re convinced is the right one. If you mean it, then be respectful of Brent. Let him know the decision has been made.” Peter was taken aback by my directness, but it also gave him a fresh perspective with which to climb out of his hole.

Instincts Are Not Enough

Ultimately, Peter made a specific plan for his next conversation with Brent. He worked out the words that would get his points across simply and unmistakably. He knew there would be some uneasiness, but he also knew the transfer was in all parties’ best interests as well as the District’s. He told Brent directly that he was being transferred and otherwise handled the situation firmly and evenhandedly.

In the process, Peter learned that his naturally gentle disposition was a virtue only so long as it didn’t sabotage his message. He discovered that management is work. Many of its requirements do not come naturally. A manager’s instincts and reflexes aren’t enough. The job also takes practice, self-reflection and discipline. It was a lesson that would alter Peter’s approach to management dramatically in the years to come.

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Watch deliberate managers handle difficult conversations. They aim to speak clearly and frankly enough to carve a path to change while protecting their relationship with their employee. That's what Peter failed to do in his first several hours of belabored conversation with Brent. The truth is, some degree of discomfort sets the stage for change. The trick is not to avoid it but to manage it head on. When you don't dance around the hard communications, you make it evident to your employee that criticism is as natural a part of the relationship as gratitude and appreciation. It lets the employee know that moments of discomfort—while never exactly welcome—are certainly survivable and uniquely valuable. | **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 and dk@wassermankatz.com. This article was adapted from their book, *The Invisible Spotlight: Why Managers Can't Hide*, available on www.amazon.com. New and seasoned managers alike have benefitted from the authors' no-nonsense, plain English approach and their practical advice for a wide variety of management dilemmas that other books simply don't address. *The Invisible Spotlight* is a hard look at the soft side of management, perfectly suited to the realities of any industry. Readers have found the real life stories in these articles extremely valuable and have helped thousands of managers perform their jobs more confidently, intelligently, and effectively. Pick up a copy or several for your colleagues, superiors and subordinates. You'll be wasting neither your money nor your time. For more information, visit www.invisiblespotlight.com. adapted from their book, *The Invisible Spotlight: Why Managers Can't Hide*, available on www.amazon.com. For more information, visit www.invisiblespotlight.com.*

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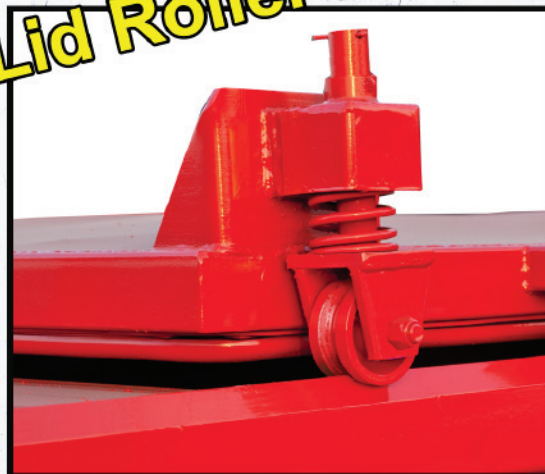
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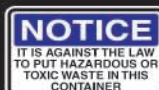
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awkwardness of working closely with a new employee. As an executive team member, and one who helped hire the new employee, don't be afraid to check in with him or her. Find a task you can do together and ask for their help; use that time to get to know them on a more personal level. Job descriptions are important, but the mission is everything.

Graduation Day

Empowerment is a privilege ... not a right. Demonstrate to new employees the eventual reward that can come after orientation is over and they are fully integrated in their job requirements. If the employee is accountable, is the right fit and has been given the proper guidance and tools to succeed, let him or her earn greater authority and privilege. Once orientation is over, outline a one-year timeline that coincides with their goals. The timeline can serve as a checklist to keep them on track towards graduation day—the time he or she becomes a fully-integrated and empowered employee within the organization.

While it may seem time intensive and costly to implement strategic hiring practices and new employee orientations, the damaging results of a major workers' compensation claim or a few minor incidents from not doing the proper due diligence in hiring, is far greater. | **WA**

John Waybart is a Senior Vice President at Assurance Agency (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. He can be reached at (847) 463-7161 or jwaybart@assuranceagency.com.

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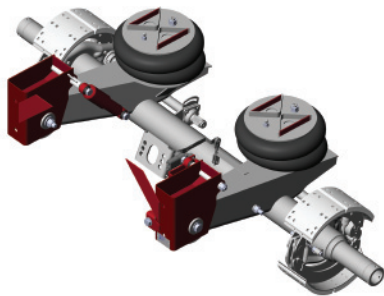
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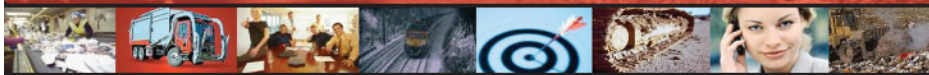
Front frame guards protect the underside of the front half of the machine. These guards prevent debris accumulation and damage to major components such as the drive shaft and lift cylinders. Protecting the underside of the rear half of the machine, belly guards prevent debris buildup and damage to major components such as the engine and transmission. The industrial package includes a hinged power train guard and an optional, powered guard for allowing easy access to remove debris. Axle seal guards provide protection from wire or other debris that could wrap around the axle and damage axle seals.

Hydraulic cylinders, too, have additional guarding. Lift cylinder baffles prevent debris buildup and compaction under the lift cylinder. Hitch area guards protect hydraulic lines and other components by enclosing the frame to reduce debris entry. Steering cylinder guards keep debris off, and sliding tilt cylinder guards provide protection from airborne debris and from material spilling from the bucket.

FOR MORE INFORMATION ABOUT EQUIPPING CAT MEDIUM WHEEL LOADERS FOR INDUSTRIAL DUTY, CONTACT YOUR LOCAL CAT DEALER OR VISIT WWW.CAT.COM/EQUIPMENT/WHEEL-LOADERS/MIDSIZE-WHEEL-LOADERS.

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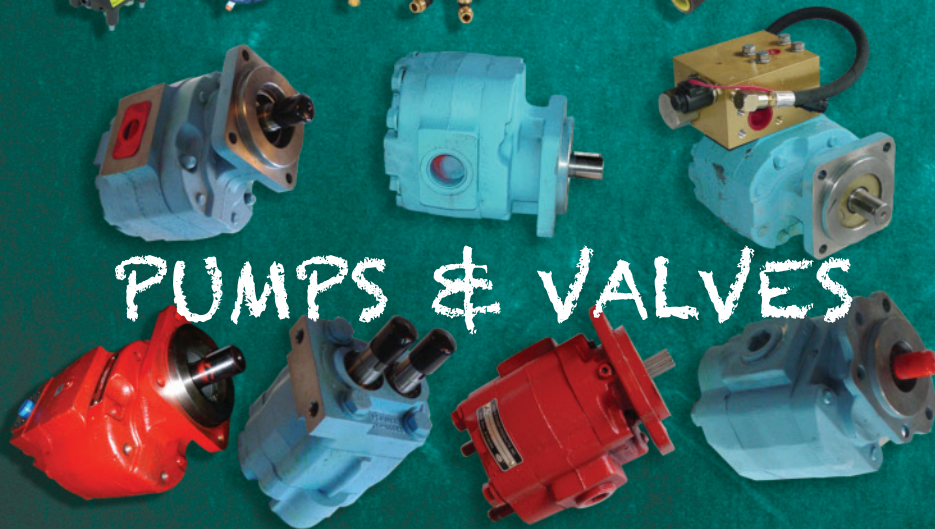
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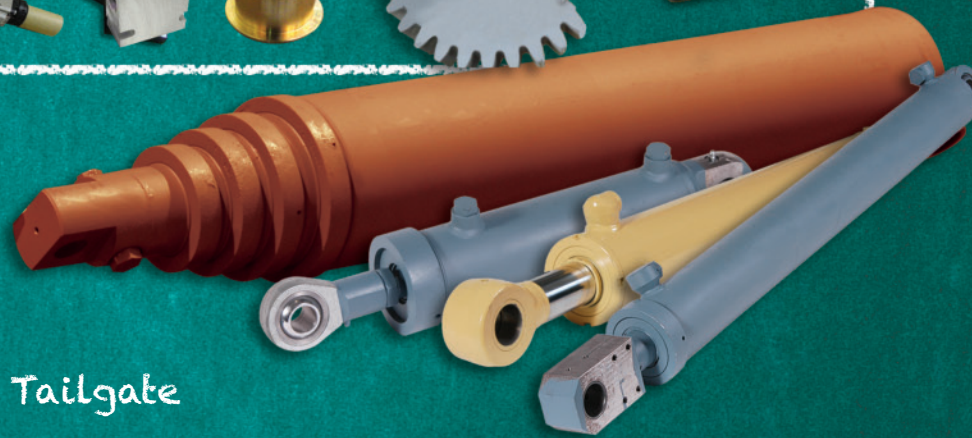
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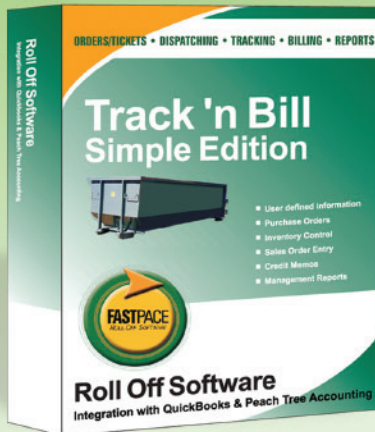


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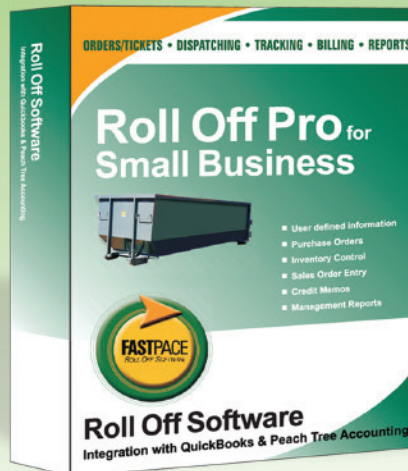
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Waste Advantage Magazine's Recycling/Transfer Stations/Landfills (R/T/L) section has become a very important part of our readership. Our timely, relevant editorial in this section—products/services releases, statistics, short tips, etc.—provides you, our R/T/L professionals, with the useful information that you need when making that important purchasing decision.

By making this important move, *Waste Advantage Magazine*, provides something for everyone in the waste and recycling industry and makes it the most complete one-stop-shop publication available today. We look forward to expanding our coverage of this segment of the industry and hearing your feedback.

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Recycling

Planning Efficient Bale Routes and Procedures

Fred Virga and Anthony Flynn

In an industry with thin margins and increasing competition, SUCCESS IN THE RECYCLING BUSINESS WILL COME TO THOSE WHO CHALLENGE THE STATUS QUO, embrace technology and partner with companies with a track record of successfully implementing similar programs.

IF YOU WALKED DOWN THE STREET AND \$100 fell out of your pocket, would you leave it behind or pick it up? If you would pick it up, then you may agree that leaving bales of recyclable material at your location or your customers' location without a solid plan to quickly and cost effectively move them to material recycling facilities (MRF) and mills is similar to leaving that \$100 on the ground. Without a solid plan, significant negative financial implications could result from lost revenue on weather-damaged or stolen bales, or fines for violations of local ordinances and fire codes.

With advances in technology, the recycling industry has the ability to leverage best practices that have been commonplace in other industries for a number of years. When implementing best practices

for pickup and delivery of bales, it is critical to consider the following areas:

- Inventory and projections
- Data collection
- Use of technology
- Routing
- Driver pay
- Engine monitoring
- Score card reporting

Bale Inventory

The first and most important step is to understand your bale inventory at each location. It is crucial to know how many bales each location produces every day and consider seasonality. The best way to accomplish this is through systematic data collection



Professional drivers and strict safety standards are key factors for an efficient bale route operation. Photos courtesy of Cardinal.

and analysis, and the right technology that allows your associates or drivers to capture much of the information electronically. You do not need to purchase a multi-million dollar ERP system that will take months to implement and tie up valuable company resources. There are reasonably priced hosted software solutions that aid in data collection and offer reporting, routing and more.

By capturing the data electronically, reports can be generated to estimate how many bales a location will produce each day based on historical data. A defined process and reporting system that enables you to estimate bale counts is a very powerful tool that often results in significant savings for companies when it comes to routing and scheduling bale pickups.

Dynamic Routing

We all feel the pain from prices at the pump, so why have inefficient set routes when you could use a load planning tool to build full trailer loads with fewer stops and fewer miles? Dynamic routing based on actual bale counts is a must if you are serious about reducing your cost per ton. Break the mold of traditional set routes in favor of routes that change.

Incentivizing Drivers

Once you have created the most efficient routes possible, the next step is to incentivize your drivers to complete those routes in the most efficient manner possible. To accomplish this, consider shifting your drivers from an hourly-based pay structure to a productivity-based pay structure. For those who make the switch, expect a 15 percent increase in driver productivity.

Whether you elect to pay drivers by the mile, stop, ton, bale or a combination of these metrics, it is imperative to have controls in place to ensure deliveries are executed safely while maintaining customer service levels. Before shifting from hourly pay to productivity pay, it is recommended that your payroll department confirm measurements are in place in order to track drivers' performances for accurate pay.

Diagnostic Tools

Up to this point, we have explained how to use technology to capture bale inventory data, create efficient dynamic routes and implement a productivity-based pay program for drivers. There are a few more steps to ensure that you are not leaving more money behind. Monitoring the performance of your power units is the next step. Remote engine monitoring is an integrated feature of the hosted software solutions that are now available. These diagnostic tools allow you to monitor MPG performance, engine idle times, vehicle speed, acceleration, RPMs and more. All of these metrics are crucial for controlling fuel spending once your vehicles are out on the road.

Measuring Performance

The final step in the process is implementing scorecard-based reporting to measure performance of the metrics discussed above. While this is the final step we discuss, defining Key Performance Indicators is an important step to take when first implementing this program. Metrics such as average bale count per stop, average bale weight per customer, miles between stops and time per stop are just a few of the important KPIs you may want to consider measuring.

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Starting with the end in mind, you can design a system that captures and measures the significant cost factors that drive profitability in your bale route business.

Putting the Right Program in Place

Transportation costs have increased steadily year after year and all signs point to this trend continuing indefinitely. Whether it is fuel prices, driver wages or equipment pricing, the components required to operate a vehicle fleet are on the rise. Putting a program in place to mitigate these rising costs is as logical as picking up your \$100. In an industry with thin margins and increasing competition, success in the recycling business will come to those who challenge the status quo, embrace technology and partner with companies with a track record of successfully implementing similar programs. | **WA**

The Cardinal Logistics Management leadership team has more than 20 years of experience serving the recycling industry. Cardinal is committed to providing industry leading dedicated contract carriage and technology solutions to recycling and waste management companies. With nearly a million tons of product transported each year, recyclable waste has become one of Cardinal's fastest growing verticals. As a 3PL that works with many different industries, Cardinal shares this experience because it is important to leverage best practices from other industries to continue to be an industry leader. For more information about how Cardinal can help you improve the efficiency of your bale route operation, call the Business Development team at (770) 993-5662, ext. 32 or info@cardlog.com.

The energy saved by recycling one glass bottle can light a **100-watt light bulb for four hours or run a computer for 30 minutes.**

(www.earth911.com)



Composting

Wow, I Can Compost That?

Mary Mazzoni

WHEN IT COMES TO COMPOSTABLES, MOST OF US THINK

of the usual suspects—fruit and vegetable scraps, yard trimmings and paper. But that's only the start of what you can toss in your bin.



Office Leftovers

Sure, you can toss shredded paper, junk mail and cardboard onto your backyard pile. But what about other office leftovers? Rescue more materials from your office trashcan by composting some of these surprising supplies. You may think that the adhesive strips on envelopes, sticky notes and masking tape exclude these materials from your bin, but they're actually just as easy to compost as other paper products. Just remember to remove any plastic windows from your envelopes before tossing them on the pile. Check for toxic ingredients first, but most water-based white glues—including Elmer's brand—are also 100 percent compostable. And don't forget all those pencil shavings! After all, they're just wood, right?



Houseplants

We can't all have a green thumb. So, if one of your houseplants has "gone to a better place," toss it on your backyard compost pile to create nutrient soil for your garden. Like dry yard trimmings, dead houseplants provide carbon-rich ingredients for your pile. Also found in coffee grounds, wood ashes and sawdust, carbon gives microbes the energy they need to work—enabling faster decomposition. To compost your fallen flora, simply remove the deceased plant and potting soil from your window box, and toss it all into the bin. Wilted flower arrangements and natural potpourri are also carbon-rich compostables.

Dry Food and Other Pet Supplies



If you own a pet, you likely have an endless stream of compostables at your disposal, and you may not even know it! Any form of dry pet food

that may go to waste makes perfect fuel for your backyard pile, as does stale catnip and unwanted rawhide dog chews. Just be sure to bury these materials in your pile to deter rodents and other pests. If your pet tends to shed, all that fur you sweep and vacuum from your floors can also go right into the compost pile.

Are smaller animals like rabbits, hamsters and parakeets more your style? Bedding from small animal cages is also 100 percent compostable. But if you plan on using your compost to feed your vegetable garden, avoid composting bedding that has been soiled with litter, as it could harbor bacteria that is harmful to human health, the EPA suggests. Rabbit food pellets and old fish food are also safe for your pile.



Beer

Beer, including brews that are stale or skunked, is both biodegradable and compostable. Like wine, beer not only composts but also acts as a composting accelerator. How does it work? The beer itself is a great source of nitrogen, and the yeast within provides food for the microbes in your pile. So, the next time you host a party and find yourself disposing of 30 half-full bottles, just dump the contents on your pile before recycling the rest. If you brew your own beer, all waste generated during the homebrewing process is also compostable.

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Old Clothing and Towels



Sure, you can donate old clothing, towels and rags to a local thrift store or shelter. But if they're too far gone to reuse, why not try tossing them on the compost pile? Since they're made from organic ingredients, all cotton and wool rags, towels and dish cloths are 100 percent compostable. Old cotton, wool and hemp clothing, socks and undergarments are also safe for your bin, as is worn-out rope made from the same materials. Just remember to wash all old towels, rags and clothing with nontoxic detergent before tossing them in the bin. Some household cleaners and detergents contain toxins that could be harmful to your microbial friends.

Loofahs and Tissues



Since they are made from natural vegetable sponges, those loofahs you use to keep your skin smooth and soft are actually 100 percent compostable. Want to close the loop? Use compost from your pile to help you grow your own loofahs right in the backyard. If allergies have you blowing your nose every five minutes, you can also toss all of those used facial tissues right into the bin. Paper towels used to clean up spills and other household messes are also safe for your pile, as long as they haven't touched any toxic cleaning supplies. While cold and flu viruses don't usually survive long outside the human body, skip composting tissues used during an illness to avoid potential health risks. | **WA**

Mary Mazzoni is a staff writer for Earth911 based in Phoenix, AZ. This article was reprinted with permission from www.earth911.com. Visit the original link at <http://earth911.com/news/2012/04/11/wow-i-can-compost-that>. Earth911.com hosts the nation's largest recycling directory and writes daily stories to help you reduce, reuse and recycle more. Visit their site now to read the latest ideas and tips to minimize your impact and learn how you can recycle more where you live.



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Landfills

Funding: Department of Energy

WHEN IT COMES TO FUNDING SOURCES FOR LANDFILL projects, consider these options from the Department of Energy.

Renewable Energy Production Incentive

The Renewable Energy Production Incentive (REPI) Program was created by the Energy Policy Act of 1992 and reauthorized by the Energy Policy Act of 2005 to extend through 2026. REPI provides financial incentives for renewable energy electricity produced and sold by qualified renewable energy generation facilities, which include not-for-profit electrical cooperatives, public utilities, state governments, U.S. territories, the District of Columbia and Indian tribal governments. The facilities are eligible for annual incentive payments of approximately 2.1 cents per kilowatt-hour (kWh) for the first 10-year period of their operation, subject to the availability of annual appropriations

in each federal fiscal year of operation. Qualifying renewable energy sources include:

- Landfill gas
- Solar
- Wind
- Geothermal
- Biomass
- Livestock methane
- Ocean
- Fuel cells using hydrogen derived from eligible biomass facilities

To be eligible, qualified renewable energy facilities must be operational before October 1, 2016. Funding is subject to annual appropriation, and the program has historically been under-funded. During years in which there is a funding shortfall,



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legislation requires DOE to allocate 60 percent of REPI funds to solar, wind, ocean, geothermal or closed-loop biomass technologies and the remainder to landfill gas, livestock methane and open-loop biomass projects. If funds are not sufficient to make full payments to all qualifying facilities, payments are made to those facilities on a pro rata basis.

To assist DOE in its budget planning, DOE requests that the owner or operator of a qualified renewable energy facility provide notification at least six months in advance of electricity generation. To receive payment, qualified facility owners and operators submit information, such as monthly electricity generation, to DOE during the first quarter (i.e., October 1 through December 31) of the next fiscal year. More details about the application procedure are provided on the DOE Web site at www.eere.energy.gov/rep1.

State Energy Program

The Weatherization and Intergovernmental Program in the DOE Office of Energy Efficiency and Renewable Energy manages State Energy Program (SEP), which provides grants to states to address their energy priorities in the areas of energy efficiency and development of renewable energy technologies. In order for a state to be eligible for these funds, it must commit to all three of the following:

- Instituting policies at state-regulated utilities that support energy efficiency
- Adopting energy efficient building codes
- Prioritizing grants toward funding energy efficiency and renewable energy programs

States will have discretion over how the money is distributed. Local governments and others interested in developing landfill gas energy projects should contact their State Energy Office to learn more about their state's process for distributing grants. DOE has posted the list of State Energy Offices at www.naseo.org/members/states/default.aspx. For more information, visit http://apps1.eere.energy.gov/state_energy_program.

Regional Biomass Energy Program

Established by Congress in 1983, the DOE's Regional Biomass Energy Program (RBEP) seeks ways to facilitate expanded use of biomass resources for the production of renewable transportation fuels and electric power. RBEP also supports bioenergy applications in the industrial and buildings sectors. RBEP has established a network of five regional offices (Southeast, Pacific Northwest, Northeast, Great Lakes, and Western) serving 50 states, the District of Columbia, Puerto Rico and the Virgin Islands. RBEP aims to increase the



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production and use of biomass for energy by providing information, technical support and other assistance, and by mitigating barriers to commercialization of biomass energy technologies. The program's long-term objectives are to:

- Improve the capabilities and effectiveness of state and local governments and industry in producing and using bioenergy
- Support resource availability and planning efforts
- Encourage economic development by investing in bioenergy technology
- Accelerate market acceptance of bioenergy technologies by reducing or eliminating market barriers and understanding economic and environmental costs and risks

Private, non-profit, and public entities are eligible for funding. Funding amounts vary from region to region. You can submit unsolicited proposals to the appropriate regional office in accordance with DOE Guide for Submission of Unsolicited Proposals. This guide is available online at www.netl.doe.gov/business/usp/unsol.html. Evaluation and award analysis will be performed by personnel at each regional office.

Loan Guarantees

The American Recovery and Reinvestment Act provided billions of dollars in loan guarantee authority to build a new green energy economy.

Innovative Technology

The Energy Policy Act of 2005 authorized DOE to issue loan guarantees to eligible projects that avoid, reduce, or sequester air pollutants or anthropogenic emissions of greenhouse gases. The projects need to employ new or significantly improved technologies when compared to technologies in service in the U.S. at the time the guarantee is issued. DOE periodically publishes requests for applications for loan guarantees, which can target specific technologies or be general.

Rapid Deployment

The American Recovery and Reinvestment Act of 2009 expanded the Innovative Technology loan guarantee program with \$6 billion for renewable energy systems, biofuel and electric power transmission projects. "Renewable energy systems" include those that generate electricity or thermal energy (or manufacture component parts of such systems). Biofuel projects are limited to those that are likely to become commercial technologies and will produce transportation fuels that substantially reduce lifecycle greenhouse gas emissions compared to other transportation fuels. The 2009 funds are limited to projects that commence construction by September 30, 2011. For more information, visit www.lgprogram.energy.gov. | **WA**

For more information on any of the funding programs mentioned above, visit www.epa.gov/lmop/publications-tools/funding-guide/federal-resources/energy.html.

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Resource Spotlight

Call2Recycle



CALL2RECYCLE® IS THE ONLY FREE RECHARGEABLE

battery and cell phone collection program in North America. Since 1996, Call2Recycle has diverted 70 million pounds of rechargeable batteries from the solid waste stream and established a network of 30,000 public collection sites. Advancing green business practices and environmental sustainability, Call2Recycle is the most active voice promoting eco-safe reclamation and recycling of rechargeable batteries and cell phones. Call2Recycle is operated by the Rechargeable Battery Recycling Corporation (RBRC), a non-profit organization. Call2Recycle is funded by product manufacturers across the globe committed to environmentally-sound recycling of rechargeable batteries and cell phones. These manufacturers place the RBRC recycling seal on their rechargeable products and batteries, informing users that they are recyclable.

How the Call2Recycle Program Works

Step #1: Batteries and Cell Phones Collected at Collection Sites

Collection sites throughout the U.S. and Canada accept rechargeable batteries and cell phones for recycling from their employees or the public. There is no cost to recycle. Simply drop off at any Call2Recycle collection location. Businesses, retailers, communities and public agencies can participate and recycle for free. You can choose to collect only from your staff or collect from the public. Sign up to become a Call2Recycle collection location.

Step #2: Collection Locations Ship Batteries and Cell Phones to Recycling Facility

Collection sites ship batteries and cell phones for free to contracted sorting and recycling facilities. Collection sites setup with Call2Recycle's collection kit will automatically receive additional kits and materials when their inventory runs low. They also offer bulk shipping options.

Step #3: New Products Are Born

Precious metals recovered from used batteries create new batteries and stainless steel products. Cell phones are recycled, refurbished and/or resold. When resold, a portion of the proceeds are donated to select charities. None of the broken down material makes its way into landfills. Since Call2Recycle was created, 70 million pounds has been diverted from being landfilled.

Safe Transportation

Call2Recycle works closely with the U.S. Department of Transportation's (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) to ensure safe collection and recycling of rechargeable batteries collected by the program by:

- Regularly providing program participants with safety updates to maintain DOT compliance
- Communicating to program participants and supporters about safety regulations through newsletters, print materials, Webinars and e-updates.

The DOT also audits INMETCO, to ensure collection containers from program participants are packed and labeled according to guidelines. The program earned a 95 percent compliance rate during the last DOT audit. The goal is to reach 100 percent and Call2Recycle will continue educational efforts about safety and shipping.

How to Participate

More than 30,000 U.S. and Canadian retailers, businesses, communities and public agencies participate in the Call2Recycle program. The benefits include:

- Rechargeable batteries and cell phones* are properly and safely recycled at no charge to you (*cell phones in good condition are refurbished and resold)
- An easy and free way to keep toxic waste from entering landfills and give reclaimed materials a second life

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- Free collection kits and marketing materials to promote your sustainability efforts
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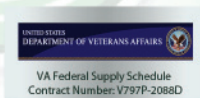


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Transfer Stations

Transfer Station Siting Criteria

ALL SITING CRITERIA MUST BE DEVELOPED

before identifying potential transfer station sites. This approach ensures siting decisions are based on objective criteria. It is important to note that no site may meet all the criteria, in which case, each criterion's relative weight and importance must be considered.

Exclusionary Siting Criteria

Siting a waste transfer station, or any type of facility, in areas with preclusive siting criteria is often prohibited by federal, state, or local laws or regulations, or requires facilities to incorporate special engineering design and construction techniques. Even when siting in excluded zones is allowed, the added engineering designs or strong public opposition can significantly increase construction costs. In general, it is best to avoid siting in these areas. Exclusionary criteria might include areas such as:

- Wetlands and floodplains
- Endangered and protected flora and fauna habitats
- Protected sites of historical, archeological or cultural significance
- Prime agricultural land
- Parks and preserves

Some examples of federal laws defining these areas include the Endangered Species Act, the Migratory Bird Conservation Act, the Coastal Zone Management Act, the Wild and Scenic Rivers Act, the Marine Protection, Research and Sanctuaries Act, and the National Historic Preservation Act.

Technical Siting Criteria

The second category of criteria to develop includes technical parameters that help define the best potential facility sites. These criteria provide guidance on specific engineering, operation and transportation conditions that should be considered to ensure that potential sites are feasible from technical, environmental and economic perspectives.

Central Location to Collection Routes

To maximize waste collection efficiency, transfer

stations should be located centrally to waste collection routes. As a rule of thumb in urban and suburban areas, transfer stations should be no more than 10 miles away from the end of all collection routes. Beyond that distance, collection routes might need to be altered to enable refuse to be collected and deposited at the transfer station within one operating shift.

Access to Major Transportation Routes

The transfer station should have direct and convenient access to truck routes, major arterials and highways (or rail or barge access, if appropriate). For large metropolitan areas, direct access to rail lines or barges will significantly reduce the number of large transfer trailers leaving the station and traveling area roads. It is preferable to avoid routing traffic through residential areas because traffic generated by transfer stations contributes to congestion, increased risk to pedestrians, increased air emissions, noise and wear on roads, and litter problems.

Site Size Requirements

The area required for specific transfer stations varies significantly, depending on the volume of waste to be transferred, rates at which waste will be delivered, the functions to be carried out at the site and the types of customers the facility is intended to serve. Locating a site of sufficient size is critical to operating efficiencies and minimizing impacts on the surrounding community. Engineering input can establish preliminary size criteria based on a conceptual design.

Sufficient Space for Onsite Roadways, Queuing and Parking

Transfer stations typically have onsite roadways to move vehicles around various parts of the transfer site. Waste collection trucks can be up to 40 feet long. Transfer trailers that move waste to a disposal facility are typically 50 to 70 feet long. These vehicles need wide roadways with gradual slopes and curves



to maneuver efficiently and safely. Also, the site will need space for parking transfer vehicles and to allow incoming and outgoing traffic to form lines without backing up onto public roads.

Truck and Traffic Compatibility

Transfer stations often receive surges of traffic when collection vehicles have finished their routes. Transfer station traffic varies locally, but tends to peak twice a day. The first peak is often near the middle of the day or shift, and the second at the end of the day or shift. Therefore, the best sites for transfer stations are located away from areas that have midday traffic peaks and/or school bus and pedestrian traffic.

Ability for Expansion

When selecting a site, consider the potential for subsequent increase in the daily tonnage of waste the facility will be required to manage or added processing capabilities for recycling and diversion. It is frequently less expensive to expand an existing transfer station than to develop a new site due to the ability to use existing operations staff, utility connections, traffic control systems, office space and buildings.

Space for Recycling, Composting and Public Education

A transfer station could be sited in areas also conducive to recycling or composting activities. Many transfer stations are designed to enable residents and businesses to drop off recyclables and yard waste in addition to trash. Some transfer stations incorporate education centers or interpretive trails focusing on waste prevention. These types of facilities offer increased utility to the community.

Buffer Space

To mitigate impact on the surrounding community, a transfer station should be located in an area that provides separation from sensitive adjoining land uses such as residences. Buffers can be natural or constructed and can take many forms, including open spaces, fences, sound walls, trees, berms and landscaping.

Gently Sloping Topography

Transfer stations often are multilevel buildings that need to have vehicle access at several levels. Completely flat sites need ramps or bridges constructed to allow vehicle access to upper levels (or areas excavated to allow access to lower levels). Sites with moderately sloping terrain can use topography to their advantage, allowing access to the upper levels from the higher parts of the natural terrain and access to lower levels from the lower parts. Sites with steep slopes might require extra costs associated with earthmoving and retaining walls.

Access to Utilities

Transfer stations generally require electricity to operate equipment, such as balers and compactors, lighting, water for facility cleaning, restrooms and drinking, and sanitary sewer systems for wastewater disposal. Some smaller transfer stations use wells for water supply, and some, especially in more rural settings, use septic systems or truck their wastewater for offsite treatment.

Zoning Designations and Requirements

Zoning ordinances frequently classify transfer stations as industrial uses, which limits their siting to areas zoned for industry usually in conjunction with a special use permit.

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Exclusive use of predetermined land use criteria, however, might result in locating transfer stations in areas already overburdened with industries or clustering of these types of facilities in areas adjacent to poor and minority communities. If local zoning ordinances are so restrictive that they disallow facility siting outside pre-established industrial zones, substantial engineering and architectural design must be incorporated into the facility to minimize impacts on the surrounding community.

Addressing Cluster Zoning

Siting waste transfer stations exclusively in areas zoned for industrial use can lead to a condition known as "cluster zoning." Especially restrictive zoning frequently forces transfer stations into a few areas. In general, siting transfer stations in industrial zones eliminates permitting agencies' discretion to deny such use because technically, the transfer station is permitted "as a matter of right." These types of zoning actions also prevent an impacted community from influencing the zoning decision. Such intensive clustering of industrial facilities may have negative impacts on neighboring residents, such as increased traffic, noise, odors and litter. Communities need to address clustering and zoning issues at the local level through comprehensive planning that considers the aggregate effects of clustering certain activities and the equity in sharing community burdens. To avoid clustering when siting a new waste transfer station, establish

a community stakeholder or advisory panel to participate in the siting process. This advisory panel should consist of representatives from all potentially affected communities, state, local and/or tribal regulatory agencies, public and private waste trade groups, local community development organizations and any other concerned community, environmental or environmental justice organizations. To prevent disproportionate facility siting:

- Zoning must not be presumed to prevent significant impacts on poor and minority communities
- The potential for clustering should be examined
- Other close or adjacent land uses should be examined to determine compatibility
- Other close or adjacent land uses should be examined to analyze cumulative impacts

Communities with a waste transfer station clustering problem might consider requiring a minimum distance between facilities as one possible solution. Designating a minimum distance between waste transfer stations, or other industrial facilities, will limit clustering by forcing the siting of new facilities away from existing operations. The end effect can be a more equitable dispersion of facilities and their negative impacts. A community will need to determine what minimum distance is reasonable. | **WA**

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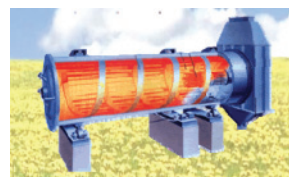
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