



FLEETS & TECHNOLOGY

How a Minnesota Operation is Using a Robotics Solution to Sort Organics

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Megan Greenwalt | Jul 19, 2017

As the waste and recycling industry becomes more comfortable with the latest technology, Marathon Equipment, a Dover Co., Organix Solutions and Waste Robotics recently announced a partnership to install a bag-sorting robot at Randy's Sanitation of Minneapolis, Minn., to help automate its organics diversion sort line.

“Randy’s already had the Organix Solutions compostable bag program in place but the extraction was performed by manual labor,” says Eric Camirand, chief technology officer of Waste Robotics, based in Quebec City, Quebec, Canada. “The robot just makes things simpler and more efficient. We see this industry becoming more automated.”

Maple Grove, Minn.-based Organix Solutions provides sustainable collection and processing solutions that recover organic waste and maximize the potential value of the recyclable feedstocks. According to Jim Wollschlager, CEO of Organix Solutions, residents put their organics in the company’s Green Bag Organix compostable bag usually provided by the hauler or the municipality before they are identified and sorted at the transfer station.

Once a cart or bin reaches the transfer station, the municipal solid waste (MSW) is put through the Waste Robotics robot that detects these specific bags and extracts them. Bagged organics are then transferred to composting or anaerobic digestion sites and MSW is directed to the landfill.

Several types of organics collection applications are possible with this technology—residential, multi-dwelling and commercial.

“The budget used to buy the carts or bins is sufficient to buy the robots necessary to execute the sorting. The savings come from the weekly collection,” says Wollschlager. “It costs four times less to provide compostable bags to citizens than to send a dedicated truck to lift all those carts or bins (that are) sometimes not very full.”

Waste Robotics develops and builds robotic solutions for the waste industry. The company integrates waste handling processes, computer vision, deep learning algorithms and robotic technologies to enable smaller, more precise and safer waste recycling facilities.

“Waste Robotics has developed an intelligent robot that in this application is extracting solely organics filled compostable bags, but our robots are capable of extracting anything: metal, wood, OCC, plastics, electronics, rocks, bricks, etc.,” says Camirand.

It’s not the only current application of robotics at MRFs .

In late March, the Carton Council of North America joined forces with Alpine Waste & Recycling and AMP Robotics to test the use of AI to improve the recycling of food and beverage cartons.

Another notable partnership is between ZenRobotics and Recon Services Inc., which have come together to bring the ZenRobotics Recycler from Finland to the U.S. The ZenRobotics Recycler, which is currently installed at Recon’s construction and demolition (C&D) recycling facility in the U.S., reclaims materials from waste via advanced machine learning technology, sorting materials like metal, wood and stone fractions.

Bulk Handling Systems (BHS) also has created a robotic sorting technology. Max-AI technology, an artificial intelligence that identifies recyclables and other items for recovery, has two immediate solutions: the Max-AI Vision System and the Max-AI Autonomous Quality Control (AQC) unit. The vision system provides information, and the AQC unit adds a robotic sorter to pick out and place up to six different materials from the conveyor belt into sorting chutes.

The partnership between the Randys and Waste Robotics came about as Waste Robotics was developing this robotic application for the Quebec province market, which has banned landfilling of organics for 2020.

“Several Quebec municipalities were contemplating this bag system, which is well established in more than 30 municipalities in Europe,” says Camirand. “It was a mutual discovery between Waste Robotics and Organix Solutions. We didn’t know they had this compostable bag co-collection program in place in the Minneapolis

area and they didn't know that such robotic technology was available and applicable to their program.”

Each company maintains a different role in the partnership. Randy's Environmental is the hauler and transfer station owner-operator that is offering competitive MSW collection pricing because of their organics co-collection program and diversion system, says Wollschlager.

Organix Solutions holds the patent for the organics co-collection program and is the manufacturer of this proprietary truck-compaction-resistant-compostable bag.

Marathon Equipment, based in Vernon, Ala., is the equipment provider and integrator for Randy's new intelligent transfer station. The company manufactures waste handling and processing equipment, including balers, compactors, material handling systems and next generation technologies designed to increase waste stream diversion from America's landfills.

“Marathon is pleased to be working with Waste Robotics and Organix to advance our collective vision of value-added diversion of organic waste from landfill with new-to-world technologies such as this,” said Geoff Apthorp, Marathon's vice president of business development and engineering, in a statement.

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