

Walmart's Landfill Waste Reduction, the Organics Solutions

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Walmart, the world's largest retailer, defines its mission as "Saving People Money So They Can Live Better." The company pursues that goal on behalf of many millions of customers as well as its 1.4 million associates of whom live and work in the United States. At the same time, Walmart is committed to its continued focus to be a leader on environmental sustainability. In 2005, Walmart took on three aspirational goals that encompass all areas of our operations and products – energy, waste and sustainable products. Since those goals were communicated, we've aggressively worked to address waste in our operations. In the U.S. specifically, we're committed to reaching zero waste to landfill by 2025. Today, we're diverting 81.66 percent of the materials that flow through our U.S. stores, clubs, distribution centers and other facilities. While we continue to look for ways to divert materials to a higher and better use, we've also successfully worked with our suppliers and vendors to prevent many materials from becoming part of the waste or recycling stream. Total annual waste generated from operations in the U.S. (diverted and nondiverted) has decreased by 3.3 percent, compared to our 2010 baseline.

In 2008, estimating that food waste accounted for nearly 35% of our compactor waste, Walmart began looking for a solution. At that time, an organics recycling infrastructure did not exist large scale across the U.S. The majority of haulers were not servicing organics as part of their business model because of lack of equipment, lack of disposal outlets, and high costs. Traditional players in the solid waste world offered inadequate solutions that did not scale to our needs and could not fulfill Walmart's broad-reaching sustainability initiatives.

Understanding the problem, Walmart approached Quest Resource Management Group, who had already been managing Walmart's recycling programs for items such as tires, motor oil, grease, and meat rendering collections, to develop a comprehensive organics recycling program that was environmentally and fiscally sustainable. The challenge to Quest was to build a fiscally sustainable organics network for non-donatable food that could provide service to all Walmart and Sams Club facilities across the United States. Quest was tasked with building a model following the EPA Food Recovery Hierarchy while also creating a network that could be leveraged by other companies, in turn driving down the cost of organics recycling across the industry.

Quest was also challenged to find a revenue stream for organics, and although the revenue from organics recycling does not cover the entire cost of the program, we have come to a tipping point for the industry to look at mixed organics from a retail source as a commodity instead of a waste stream. Walmart has continued to look for opportunities to earn commodity value on organic waste. The maturation of the

organics landscape in the U.S. has continued to lower organics recycling costs, and the diversion of the material has shown significant savings in overall trash costs.

The journey with Quest began in our California stores and clubs as a pilot in September 2009. The purpose of the pilot was to take key lessons and apply to all Walmart facilities going forward as we completed the rollout across the U.S. By August 2010, we had 300 outlets and a network of 46 haulers supporting Walmart's organics recycling program. By the end of 2012, stores and clubs were seeing a year-over-year decrease in organics volumes as the company was gaining more insight into the organic waste streams that were being generated and controlling product flow more efficiently. Focusing on food donations and brokering for food items higher up in the product chain, rather than shipping to stores and clubs, greatly influenced this reduction. Fast forward to 2014, and the organics network has grown to 310 outlets and 75 haulers.

Through this process, Walmart and Quest have noted key lessons while building our organics recycling program:

- **Containers:** The correct type of container is one component of a successful program, as it creates a positive experience for associates and is also important for compliance with local codes and ordinances. The containers used in Walmart's program are locked to maintain more control over the organic material deposited in them, preventing contamination. Containers are also carefully selected for size and material to allow for easy use, to prevent leaking, to allow for washing, and to avoid sinking into the pad site. Considerations such as insects and wild animals are also important when selecting and placing organics containers.
- **Trucks:** All types of trucks capable of hauling organic food material were considered for the program. It was clear that the most successful truck was a combination of what our supplier partners would need for a successful operation while at the same time servicing Walmart's program in an efficient and compliant manner. The ideal truck has an integrated scale, ability to tip bins and totes, is equipped with splash guards, baffles and an integrated closed ceiling mechanism, along with an integrated bin cleaning mechanism.
- **Data:** The ideal service model equips the driver with a handheld device to process paperwork and weights, along with GPS systems to eliminate the need for manual signatures.
- **Training:** A comprehensive education and training program is essential to success, ensuring the organic waste is properly separated and the stream is clean.

Working towards this ideal is an ongoing process; we are continuing to move towards more efficient ways to obtain data, move organic material, and help our partners be successful. For example, by the end of 2013, many haulers were using technology such as integrated scales, handheld devices, and GPS to

ensure more accurate and timely data. This eliminates the need for the driver to require signatures during services, which will save time for both the drivers and associates.

Aligned with the primary goals to develop a comprehensive organics recycling program, Quest and Walmart are always looking at ways to make the organics program more environmentally and fiscally sustainable. Since inception, the organics network has been instrumental in Walmart exceeding 80% Landfill Waste Reduction across the U.S. It has helped to create 500 green jobs and foster the local economy where stores and clubs are located. It has also provided the opportunity to start conversations around the commodity value of organics and closed loop solutions. Walmart's organics portfolio continues to advance as cost effective solutions and technologies are discovered. In 2010, 68% of our organics went to composting; in 2012, composting was 52% with animal feed and anaerobic digestion continuing to increase. Most recently, at the beginning of 2014, we were sending 36% to compost, 60% to animal feed, and 4% to anaerobic digestion. We've accomplished a lot and laid a strong foundation, but we know there's also much more opportunity for our business to take out cost and drive innovation. We've also learned that when you take on such big goals without knowing exactly how to achieve them, you're going to hit unexpected bumps along the way. There are times when we don't get where we want to go fast enough – for our partners or for ourselves – and when we have to adjust our approach.

In summary, the keys to a successful organics recycling program: Select the right partner, one that understands your vision and goal and is willing to work with internal stakeholders to think beyond the current solutions to future possibilities. Make sure your goals and vision are clear and that you understand the current cost of your programs and the environmental impact of land filling. Reinforce your company's vision with a comprehensive education and training program. Training is essential to success, ensuring the organic waste is properly separated and the stream is clean. Track the program's success, goals and opportunities, and communicate to your stakeholders.