

2014 Case Study

Dillons Food Stores

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Major: Engineering Technology
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Company background

Dillons is a chain of grocery supermarkets owned and operated by the Kroger Company, an American retailer based in Cincinnati, Ohio. The Kroger Company owns more than 3,700 stores nationwide. In Kansas, Kroger operates more than 50 stores under the Dillons Division, in addition to two distribution centers.

Project background

An estimated 50 million Americans are food-insecure, yet food waste makes up the largest percentage (21%) of waste sent to the landfills.¹ In an effort to address this issue, Dillons partnered with the Kansas State University Pollution Prevention Institute (PPI) for a second year, hosting a food-recovery intern. In 2013, Dillons implemented source-reduction recommendations across most stores, reducing production of bolilo rolls and rotisserie chicken, and increasing donations to the Kansas Food Bank (KFB). In late 2013, Dillons began contracting with Quest, a service that diverts food trimmings and wastes to animal feed programs.

The 2014 intern was assigned to work with two different stores in the Wichita area, studying and identifying source-reduction and food redistribution opportunities. Through waste assessments, observations, and interviewing store associates, the intern was able to identify the following:

- ✦ Source reduction opportunities for the deli, bakery, and produce departments of both stores;
- ✦ A 95% increase in food donations to the Kansas Food Bank (KFB) from all perishable food departments; and
- ✦ Increased food trim and waste diversion from produce departments to Quest, an animal feed program.

Dillons implemented some of the 2014 intern's recommendations immediately, and the estimated annual environmental impact and cost savings can be found in a table at the end of this case study.

Incentives to change

According to the annual sustainability report,² Kroger is moving towards EPA's Zero Waste threshold of 90%, has set water conservation goals, and is committed to feeding the hungry, joining the EPA's Food Recovery Challenge.

¹<http://www.epa.gov/foodrecovery/>

Locally, Dillons stores are just as committed to reducing environmental impacts, especially in the area of food waste. In recent years, management has executed several pollution prevention (P2) initiatives to source reduce, feed hungry families, and divert food waste to animal feed. Source-reduction opportunities identified by the 2013 intern reduced over production and saved Dillons approximately \$50,000 at just two stores. In 2014, Dillons wanted to continue the food recovery work, with a goal to reduce excess food at the source and redistribute what could not be reduced, to hungry populations or animals.

Projects reviewed for P2 potential

1. Deli

The hot case at the deli in both stores was the area with the highest source-reduction opportunity. The intern identified possible areas of reduction with the BBQ baked chicken, baked chicken, and small sides.

The intern's audit revealed that more BBQ chicken was being discarded than sold. Chicken and a few other deli products are not eligible for redistribution to the KFB or Quest, so excess is landfilled. Reducing the production of BBQ baked chicken by 50% and baked chicken by 25% could prevent landfilling approximately 0.9 tons, saving the department \$5,800 annually.

Small sides at Dillons' deli have a shelf life of eight hours. The intern calculated that more small sides are discarded than sold. It was recommended the deli adjust the packaging time, reducing waste at the source. By delaying the initial packaging time by two hours, approximately 1.4 tons of waste would be avoided. Based on the sales price of these sides, Dillons could save about \$5,600 annually. The recommendation was implemented quickly.

2. Produce

The produce department was responsible for the largest portion of weight going to the landfill, generated through produce trimmings and food that was not eligible for donation to the KFB. The intern observed that the soup bar at one of the stores was producing more soup than was actually sold during the warmer months. As a result, the intern recommended soup production be cut by 50% during these months. The store implemented the recommendation immediately,

²<http://ir.kroger.com/Mobile/file.aspx?IID=4004136&FID=24368074>

with an estimated annual savings of approximately 1,500 pounds and \$6,000.

The intern also recommended excess food redistribution opportunities after conducting waste segregation of the department's daily waste. The intern observed that excess trimmings and produce not eligible for KFB were going to the waste compactor and garbage disposal, but were eligible for redistribution to Quest. Implementing this opportunity could divert 25.8 tons of food waste from municipal landfills, saving approximately \$8,000 in landfill costs. The cost to send the excess food to Quest was not calculated.

3. Bakery

The intern identified source-reduction opportunities with one of the store's donut case and bread production area. It was proposed that the bakery reduce donut and bread production in order to decrease the department's food waste.

The intern worked on re-launching the Perishable Donations Partnership (PDP) with the KFB, helping to retrain staff on the program. Initially, the bakeries were not regularly participating in the program. The north Dillons store went from donating an average of 93 lbs. of eligible items between January and June of 2014, to 615 lbs. during the month of July in 2014. The south store went from donating nothing during the first six months of 2014, to 1100 lbs. of bakery items diverted in the month of July. If the program continues, an estimated 12.8 tons of excess food will be diverted and redistributed to feed communities in 2014.

4. Dairy

The PDP program had already increased redistribution of excess dairy products, especially milk, to the KFB.

The only source of remaining opportunity was identified as eggs, which Dillons' management had initially planned on implementing. The intern concentrated on increasing food diversion to the KFB. With the new program, the dairy department at both stores increased these donations. The south store went from diverting no excess dairy products in the beginning of the year to donating 1318 lbs. of excess food to the KFB within the program's first month.

5. Meat and seafood

In the meat and seafood department of the two stores, the main focus was on increasing the departments' excess food redistribution. Fat and bones are diverted to an outside company for use in pet products. The intern made recommendations to increase the departments' food redistribution, which were immediately implemented.

6. Water conservation

Two water conservation opportunities at the two stores were identified with recommendations implemented immediately. A water leak was discovered on a reverse osmosis system at the south store, with a continuous flow rate of 2.1 GPM. The leak was fixed, with a projected annual savings of 1.1 million gallons and \$6,000.

Another water conservation opportunity was identified as store associates were thawing frozen food items using running tap water for two hours daily. The intern recommended that frozen product be pulled to the refrigerator in advance, allowing time to thaw. At a flow rate of 2.4 GPM, this will reduce approximately 210,000 gallons of water and \$1000 annually. The intern's recommendation was immediately implemented.

Summary of 2014 P2 intern recommendations for Dillons Food Stores

Project description	Annual estimated environmental impact	Annual estimated cost savings	Status
Deli BBQ baked chicken	0.5 tons	\$3,500	Recommended
Deli baked chicken	0.4 tons	\$2,300	Recommended
Deli small sides	1.4 tons	\$6,000	Implemented
Produce	26.6 tons	\$14,000	Implemented
Bakery	12.8 tons	\$1,000	Implemented
Water	1,300,000 gal	\$7,000	Implemented
Total savings	41.7 tons waste diverted 1.3 million gallons of water saved	\$33,800	
GHG reductions *	67.2 metric tons CO2e (MTCO₂E)		

*Solid waste GHG reductions calculated using 2014 WARM model; water reductions calculated using 2014 P2 GHG conversion tool