# A ‘Zero-Waste’ Golf Course — Is It Possible?

## Dairy Creek Golf Club shows the way.

BY PATRICK J. GROSS

Grandpa used to say, “Waste not, want not.” Dairy Creek Golf Club in San Luis Obispo, California, is taking that phrase literally and making efforts to become the first zero-waste golf facility in the nation. The overall goal is to recycle and reuse all products used at the golf facility and completely eliminate the need to haul any waste to a landfill.

Dairy Creek is one of three county golf courses in San Luis Obispo under the direction of Golf Course Superintendent Josh Heptig. Josh became interested in the zero-waste concept and thought that with some planning and key partnerships, the principles that have been successfully applied by other businesses could work at a golf course. In addition, it could provide a valuable education and outreach component as part of a county-wide demonstration project.

### THE ZERO-WASTE CONCEPT

According to the Zero Waste Alliance of Portland, Oregon, the overall goal of the concept is to eliminate solid waste, hazardous waste, toxics, and emissions and change our focus to looking at the byproducts generated in our daily lives as potential resources. In short, our waste products should have future applications and not simply end up in a landfill. Key to the program is choosing items used in our businesses and households with the end product in mind. As a result, there will be less risk to people and the environment, better efficiency, and lower overall costs.

### A ZERO-WASTE GOLF FACILITY

The challenge for Josh Heptig was to apply the zero-waste concepts to a normal golf course operation and analyze the waste stream to look for ways where changes could be made.

*The composting facility at Dairy Creek is an important part of the program as they work toward being the first zero-waste golf course in the nation. Because of sanitation and health codes, special composting containers were necessary at Dairy Creek for decomposing non-vegetable food waste. With the covered bins, it is possible to incorporate up to 10% fats (meats and other food wastes) into the compost without causing problems with odor or vermin.*

Where could waste be recycled, reused, or eliminated? The following processes were evaluated as they related to the various aspects of operating the golf course.

**Food and Green Waste Composting:** A composting facility was created at the maintenance facility to decompose food and green waste for reuse on the golf course. Many golf courses and homeowners are familiar with green waste composting techniques: green (grass clippings) + brown (leaves and wood chips) + moisture, and given a little time, you have a compost that can be incorporated into planter beds or divot mix. The green waste part of the equation was relatively easy. Grass clippings from greens are spread into the rough and out-of-play areas or added to the compost bin, and clippings in all other areas are returned to the turf. Brown material (leaves and tree limbs) are run through a shredder and added to the compost pile.

The bigger challenge was handling food waste from the restaurant operation. Because of sanitation and health codes, special composting containers were necessary for non-vegetable food waste to control vectors and odors. Dairy Creek partnered with EPA Inc. to install worm bins at the maintenance

facility to create a vermiculture operation that is capable of rapidly reducing restaurant waste. Earthworms are incredibly fast and efficient at decomposing lettuce and other vegetable waste, and the worm bins can easily handle the daily vegetable waste stream from the restaurant. Two food composters were donated by San Luis Obispo Integrated Waste Management Authority, which typically cost $10,000 each. With the covered bins, it is possible to incorporate up to 10% fats (meats and other food wastes) into the compost without causing problems with odor or vermin. Each bin holds 3 to 4 cubic yards and is capable of processing 150 pounds of food waste each day. The resulting compost and worm castings will be broadcast onto the golf course or incorporated into a compost tea that will be sprayed on the golf course.

**Recycling:** Every effort has been made to capture and recycle aluminum, plastic, and paper throughout the property. Sounds easy, but it's really not when you consider the many packaging and paper products involved in daily operations. Many golf courses recycle paper products in the office and maintenance operation, and have containers for aluminum cans and plastic bottles. But what about styrofoam cups? Waxed-paper sandwich wrappers? Plastic wrap used in the kitchen? Fertilizer bags and pesticide containers? The variables are far reaching and must be considered within the zero-waste concept. Although 90% of products are easily recyclable if given proper diligence, the last 10% is a tough hill to climb. Josh and his staff continue to work with vendors to look at different options for completely recyclable materials for packaging and food service.

**Reuse of Byproducts:** The composting operation provides a significant amount of material that can be reused on the golf course. The initial focus is on spreading the compost on the golf course to improve soil quality, using a portion of compost along with worm castings in the production of compost tea. The hope is that the compost and compost tea will contribute to soil fertility and natural disease suppression, a process that is still under evaluation. Another positive aspect of the operation is the reuse of grease and oil from the restaurant in the production of bio-diesel to fuel the diesel-powered tractors and golf course equipment. Although this requires some thought, planning, and logistics, this is another example of "what happens on the golf course stays on the golf course."

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## WASTE MANAGEMENT — PART OF SUSTAINABLE PRACTICES

Waste management is just one part of the sustainable practices already in place at Dairy Creek Golf Club. Recycled water is used for irrigation of the golf course. Given the sunny and windy location, plans are being investigated for capturing and using solar and wind energy. Another proposal is to install energy paddles into the recycled water supply line that could potentially off-set energy and irrigation system pumping requirements. All options are on the table, and the Dairy Creek staff is evaluating the practicality of all alternatives. The ultimate goal is to take advantage of all resources to reduce their environmental footprint.

## CONCLUSION

The rolling terrain and the beautiful natural environment are key aspects of Dairy Creek Golf Club, and that's the way Josh Heptig wants it. Keep it natural. If Dairy Creek is successful in getting to zero with its waste management program, the golf club will be a hero in the community and a wonderful example and model for other golf courses.

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