

**WASTE REDUCTION AND RECYCLING PLAN
FOR THE DEERFIELD FAIR
DEERFIELD, NH**



OCTOBER, 2005

PREPARED BY:

NORTHEAST RECYCLING COUNCIL

WWW.NERC.ORG

**WITH FUNDING FROM THE UNITED STATES
DEPARTMENT OF AGRICULTURE**

WASTE REDUCTION AND RECYCLING PLAN FOR THE DEERFIELD FAIR

Introduction

The Deerfield Fair Waste Reduction and Recycling Plan (Plan) is one component of the USDA-funded Special Events Recycling Project being conducted by the Northeast Recycling Council, Inc. (NERC), and its subcontractor, DSM Environmental Services, Inc. (DSM).

The purpose of this project is to improve special event waste reduction and recycling (recycling) efforts, particularly in rural communities with populations of less than 10,000. The scope of the project includes developing recycling plans for six events (two each in New Hampshire, Vermont and Maine), conducting waste audits at those events, and developing a manual based on the results of the plans, audits and recycling activities taking place in 2005. The Deerfield Fair is one of the participant events.

The Deerfield Fair (Fair) already adopted some recycling measures in previous years to reduce the volume of waste requiring disposal from the event. The Plan is intended to provide the organizers of the Fair with a strategy for implementing an expanded recycling program specific to the needs of their event. The Plan is based on quantitative and qualitative information gathered from discussions and email correspondence with event organizers, attendance at the event, and a waste characterization analysis of the event. In addition, the Plan is informed by lessons learned from other events and sources of information.

Event Background

The 129th Annual Deerfield Fair took place on September 29 and 30, and October 1 and 2, 2005 at the Deerfield Fairground in Deerfield, N.H. Dubbed the “Oldest Family Fair in New England”, the event is organized by the Deerfield Fair Association, and features agricultural activities and demonstrations, horse shows, a pig scramble, oxen pulling, a large midway and food vendors. Table 1 provides an event overview.

Table 1: Event Overview

Event	129th Deerfield Fair
Location	Deerfield, NH
Organizer	Deerfield Fair Association
Staff/Volunteers	11 Superintendents, other staff and volunteers
Dates	September 29 and 30, October 1 and 2 (T, F, S, S)
Attendance	120,000 estimated
Web site	http://www.deerfieldfair.org/

Material Generation and Management

Trash barrels were distributed all around the fairgrounds for use by fairgoers. When full, bags from inside the trash barrels were removed and left next to the trash barrels. During the evenings, bags of trash were picked up by paid workers and discarded them into a packer truck. Waste Management, Inc. is contracted to provide three packer trucks and drivers for this evening shift.

In addition, there were a few small dumpsters available for vendor use. Tonnage figures for 2005 are not currently available, however in 2004 there was 75 tons of trash picked up from the fairground and the campsites.

Grease was collected in separate containers located near food vendors. Approximately fifteen to twenty 55-gallon drums of grease or waste vegetable oil was generated in 2005. Baker Commodities provided the grease collection service.



In the past, there was an aluminum can recycling effort, but it was not implemented in 2005. A former volunteer recycling organizer indicated that the recycling containers often were contaminated with other trash. Barrels that say “Recyclable Cans Only” are still used by the Fair.

Waste Characterization



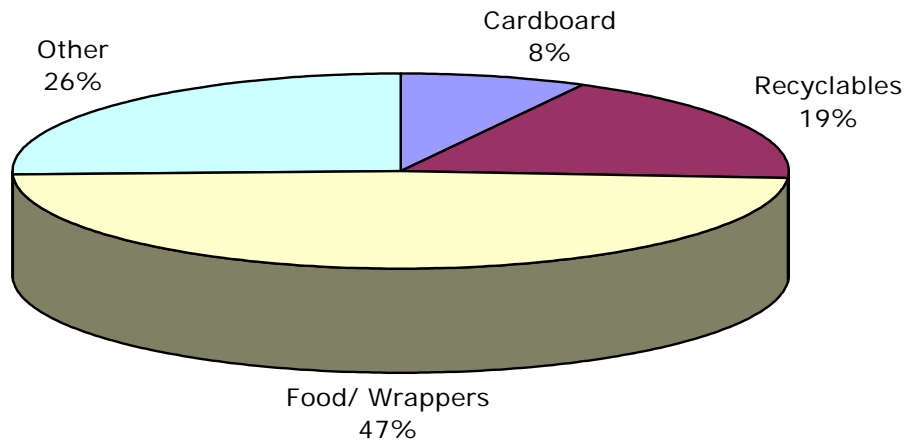
A waste sort was conducted on Thursday, September 29, 2005 after the first day of the event. Some waste was taken from the back of the packer truck, yet most was removed from trash barrels located around the fairgrounds, loaded on a cart and rolled down to the sorting area at the far end of the event. (See photo, left.) Four individuals sorted 196 pounds of waste, representing just 0.13 percent of total waste estimated to have been generated at the event. Given this low percentage of total waste examined, the findings from the waste sort need

to be considered rough estimates. However, a visual review of all waste at the event, conversations with event staff, as well as information from other events indicates that this characterization is a useful guide. Table 2 and Figure 1 provide more details on the waste characterization.

Table 2 : Deerfield Fair Waste Characterization

<i>Material</i>	<i>Net Weight of Material Sorted (Lbs)</i>	<i>Percent of Material by Weight</i>	<i>Total Weight of Materials Disposed (Lbs)</i>
Cardboard	15.2	7.73%	11,597
Recyclables	36.4	18.51%	27,772
Food/ Wrappers	94.6	48.12%	72,177
Other	50.4	25.64%	38,454
Total	196.6	100.00%	150,000

Figure 1. Deerfield Fair Waste Generation – Percent by Weight



Observations from Waste Sort

The largest portion of waste (47 percent) was food wrappers (plates, cups, utensils, bags) and discarded food generated by the vendors and 120,000 individuals who attend the event.

There was also a significant quantity (27 percent) of cardboard and other recyclable items left in the trash stream. “Other recyclables” include, metal, plastic and glass cans, jars and bottles from campers, fairgoers and vendors, which totaled almost 14 tons.

Recyclable cardboard represented 8 percent of the waste (almost 6 tons). Event staff indicated that at the beginning of the event, vendors generate a large quantity of clean cardboard as they are setting up their booths. One of the dumpsters examined showed that it was almost entirely full of cardboard (photo, right). It is likely that the sort under-represents cardboard waste as the majority of waste examined was from fairgoers, and

not vendors. Waste sorts at other events without cardboard recycling programs indicate that cardboard percentage would be higher as well.

The “other” category included plastic trash bags, other plastic, some electrical wiring, switches, and lamps (including some fluorescent lamps), used oil filter and waste oil, clothes and toys.



Waste Costs

The waste disposal costs for 2004 were \$55,000, \$20,000 of which were paid to the hauler for waste disposal, and the remainder to staff and organizations that helped with waste handling at the event.¹ Costs for 2005 event were not available. This represents \$266 per ton for waste collection in packer trucks, and disposal.

Recycling Recommendations for 2006

Cardboard Recycling

Cardboard recycling is the number one recommendation for 2006. There is a lot of cardboard generated by vendors, which has a valuable end use, is relatively easy to separate from other materials, and a majority of which could be collected before the start of the fair. The recommendation would be to set up well-labeled dumpsters for flattened cardboard to be used by vendors, and/or event staff. Ideally, the cardboard recycling container would be located next to garbage dumpsters, so that cardboard can be deposited on trash runs. Alternatively, a cardboard recycling container could be located next to where the Fair Association parks its packer truck. A container with a closed top is ideal to protect the cardboard from the rain.

Communication with vendors prior to the event, or even during contract negotiation stage, should inform them of the requirement to recycle cardboard at the event. In addition, staff of the Fair should remind vendors of the requirement once they arrive, with both a written flier (see sample in Appendix A) and verbally. Cardboard recycling could save \$500 to \$1000 or more (assuming at least 6 tons of materials are diverted, and avoided disposal costs amount to \$100 per ton²). In addition, cardboard recycling would create a significant environmental benefit.

Given the significant responsibility of currently managing trash at the event, there needs to be a specific plan for allocating staff and volunteers to manage a cardboard recycling effort. Given the high volume of cardboard, and considerable expense allocated currently

¹ Interview with Joe Sears, Superintendent of Solid Waste at the Deerfield Fair, June 2005.

² This estimate is based on the assumption that hiring an entity to rent a cardboard container and remove it would be at least \$100 less per ton than the cost of collecting waste in a packer truck and disposing of it at the landfill.

for handling waste at the event, it seems that resources exist to create a successful cardboard recycling effort.

Food and Beverage Container Recycling

In order to evaluate the cost-effectiveness of food and beverage container recycling, it would be advised to request a quote from the waste hauler to provide a dumpster for vendors to place empty food containers, such as #10 metal cans, glass jars and non-deposit plastic bottles for recycling. In addition, recycling containers for beverage containers for use by fairgoers could be placed near garbage cans. Based on the waste sort, it is estimated that there are at least 10 tons of food and beverage containers that could be diverted from the waste stream (including fluids in some of the bottles).



Recycling cans and bottles is a very visible means of communicating concern for the environment to vendors and fairgoers alike. The Deerfield Fair already has containers with small holes in the top of the lid (photo left). The suggestion would be to repaint these containers to make them stand out from the other garbage containers, and place them next to garbage cans. Staff would divert recyclables to the recycling area at night when they empty the trash containers.

Grease

It appears that the grease rendering effort is working well and should be continued. It may make sense to include clear directions to vendors regarding the procedures that they should follow with regard to managing the waste vegetable oil and grease. An alternative is to investigate local users of grease or used vegetable oil for bio fuel for diesel vehicles. This could be coupled with displays that describe this innovative strategy. More information on this activity will be available in the *Special Event Recycling Manual* that NERC is preparing for USDA.

Food and Food Wrappings

A more ambitious recycling effort could involve food waste and food wrappers. It might be possible to combine food waste with manures at the back of the site and turn them in with a front end loader and allow them to compost. Off-site composting is another option.

Some of the issues to consider in order to divert organic food waste and wrappers to a compost operation are: whether to compost the material on site, or at an off-site permitted compost facility; the cost and effort to ensure that vendors serve food only on biodegradable plates and cups, and provide only biodegradable utensils; and the cost and effort to set up systems for food vendors and fairgoers to place organic waste in

designated containers. More information on such programs will be made available in the *Special Event Recycling Manual* that NERC is preparing for USDA.

One of the principle purposes of such an effort would be public education and demonstrating a commitment to waste diversion. It is not likely that this effort would save money, when all the costs associated with setting up and managing the system are accounted for, and it would require a significant level of organization.

Recycling Communication

There are a number of ways that the event could be used to help promote recycling. Accurate and legible signs at the bottle and can, cardboard, grease and any other recycling receptacle is important for both vendors and fairgoers. Also, information can be provided to vendors in the form of fliers and personal communications. Communications with fair goers (maps, brochures, etc) or the media (press releases) help to get the word out about recycling at the event, and help to promote recycling more generally as well.

Finally, the event itself can serve as a forum for recycling by allowing a recycling group or program to put up a recycling display, or have recycling related games at the event. Given the agricultural nature of the event, and the large audience attracted, this could be a valuable opportunity for helping to promote the recycling message.

Please Help Us to

Recycle Cardboard

at the Deerfield Fair

**PUT ALL DRY CARDBOARD IN THE DESIGNATED
CARDBOARD RECYCLING CONTAINER**

DID YOU KNOW?

Each ton of recycled paper can save 17 trees, 380 gallons of oil, three cubic yards of landfill space, 4,000 kilowatts of energy and 7,000 gallons of water!

RECYCLE OTHER ITEMS TOO:

Please recycle clean food and beverage containers (aluminum cans, tin cans, glass bottles, plastic bottles) in the recycling containers located in food area.

THANKS FOR



PITCHING IN!