

**WASTE REDUCTION AND RECYCLING PLAN FOR
TUNBRIDGE WORLD'S FAIR
TUNBRIDGE, VT**



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PREPARED BY:

NORTHEAST RECYCLING COUNCIL

WWW.NERC.ORG

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Introduction

The Tunbridge World's Fair (Tunbridge 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 Tunbridge Fair is one of the participant events.

The Tunbridge Fair has already adopted some recycling measures to reduce the volume of waste requiring disposal from the event. The Plan is intended to provide the organizers of the Tunbridge 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 134th Annual Tunbridge World's Fair took place on September 15, 16, 17 and 18, 2005 at the Tunbridge Fairground in Tunbridge, Vermont.¹ The event is



organized by the Tunbridge Fair Association, and features a midway, food vendors, harness racing, agricultural exhibits, a demolition derby, musical entertainment and dancing, animal pulling events, mechanical pulling events, and crafts. Table 1 provides an event overview.

¹ The Tunbridge World's Fair has run continuously since 1867 except in 1918, due to the great flu epidemic, and during World War II, due to the great number of men who went into service.

Table 1 : Event Overview

Event	134th Tunbridge World's Fair
Location	Tunbridge, Vermont
Organizer	Tunbridge World's Fair Association
Staff/Volunteers	Ten staff
Dates	September 15-18, 2005) T, F, S, S
Attendance	50,000 estimated
Food Vendors	40 food vendors (see list below)
Web site	http://www.tunbridgefair.com

Material Generation and Management

Trash barrels were distributed all around the fairgrounds for use by fairgoers. Bags of trash inside the barrels were removed and replaced by Fair staff and volunteers during the event. Some beverage container recycling and cardboard recycling also took place at the event.

Event organizers indicated that there were two 30-cubic-yard dumpsters and two other dumpsters (about 20 yards each) that were filled to the top. Exact tonnage of waste for 2005 is not known, but is estimated at 22.5 tons.² Total volumes of cardboard and beverage containers are not known.

Waste Characterization

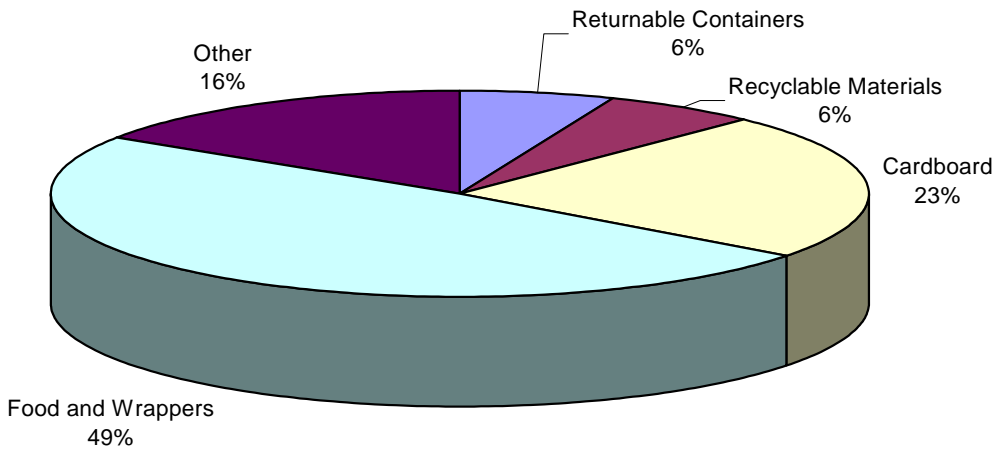
A waste sort was conducted on Monday, September 19, 2005 at the end of the event. Three individuals sorted 357 pounds of waste, representing just 1 percent of total waste estimated to have been generated at the event. Given this low percentage of total waste examined, the findings need to be considered rough estimates. However, a visual review of all waste at the event as well as information from other events indicates that this characterization is a useful guide.

² Assumptions are: 100 cubic yards and 450 pounds per yard, based on conversion figures for loose commercial waste from the Solid Waste Association of North America (SWANA).

Table 2 : Tunbridge Fair Waste Characterization

<i>Materials</i>	<i>Weight of Material Sorted (Lbs)</i>	<i>Percent of Material Sorted</i>	<i>Total Estimated Weight of Material Disposed (Lbs)</i>
Returnable Containers	21	6%	2,649
Recyclable Materials	21.4	6%	2,700
Cardboard	81.2	23%	10,244
Food and Wrappers	170.7	50%	22,468
Other	55	15%	6,939
Total	356.7	100%	45,000

Figure 1. Tunbridge Fair Waste Generation – Percent by Weight



Observations from Waste Sort

It was evident from the waste sort that there was a significant quantity (35 percent) of recyclable items left in the trash stream. Cardboard represented 23 percent of the waste, and other recyclables represented another 12 percent. While systems were set up for cardboard and returnable containers, it is unclear how much material was collected with these systems, or how effectively they were promoted and carried out.

The demolition derby generated some waste from automobiles, although only small amounts were identified in the waste sort. There was a large quantity of uneaten food and food contaminated wrappers in the waste, which together represented 49 percent.

Waste Costs

The waste disposal costs for 2004 were \$7500, according to the event organizers. Costs for the 2005 event were not made available.

Recycling Plan for 2006

Bottle and Can Recycling

While it is unclear how many bottles and cans were recovered in 2005, it is estimated that there were 2700 pounds of VT redeemable containers in the waste, with an average weight of 8 ounces each. The redemption value on the estimated 5400 containers would be \$270. To capture more of these containers, clearly marked receptacles for redeemable bottles and cans need to be placed next to all garbage cans accessible to the fairgoers. (See appendix A for sample containers.)

Cardboard Recycling

Cardboard recycling can be improved in 2006 by providing a designated cardboard recycling area accessible to vendors during set up for the event, and to staff during the event. Ideally, the cardboard container would be located next to garbage dumpsters so that cardboard can be deposited on trash runs. A container with a closed top is ideal to protect the cardboard from the rain. In addition, outreach to vendors encouraging them to keep dry cardboard separate for recycling is critical. This outreach can take the form of fliers distributed to vendors, be included in contract language and through personal outreach at the event itself. (See sample flier in Appendix B.)

Other Recyclables

It would be worth providing a location, perhaps near cardboard dumpster, for vendors to place empty food containers, such as #10 metal cans, glass jars and non-deposit plastic bottles. These materials can be recycled at the local recycling station. The estimated 2700 pounds of recyclables would reduce waste disposal costs by \$150 or so, and would help offset any costs associated with a designated recyclables container.

Grease

Given the high volume of fried food and number of vendors generating used cooking oil at the events, grease recycling is an important initiative to pursue in 2005. There are two avenues for collecting grease that were identified this year. First, Baker Commodities in Burlington (802) 658-0721 would drop off a large container for grease and then come empty it when it was full. This container could be used at any event at the Tunbridge Fairground during the year. The quoted cost from Baker per time the container is emptied is \$150. The other option is to work with the Vermont Biofuels Association to find local users of waste vegetable oil (WVO), which can be used either as a feedstock for biodiesel and directly as a "biofuel" for "grease cars" and other technologies that can use the WVO directly. Not only is there a potential to use this waste material for a valuable use, but it will reduce the chance that grease is put into the grey water system at the Tunbridge Fairgrounds.

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. The Central Vermont Solid Waste Management District (802 730-9475) provides assistance in siting such facilities. Off-site composting is another option.

The bigger hurdle with this sort of a program is to first ensure that all plates, cups, napkins and utensils (forks, knives, spoons) that vendors provide and that are available to fair-goers are biodegradable. The next hurdle is to set up separate food waste collection bins. More information on such programs will be made available in the Special Event Recycling Manual that NERC is preparing for USDA, if there is interest in pursuing this initiative further.

Recycling Education

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. Also, communications with fair goers (maps, brochures, etc) or the media (press releases) can help to get the word out about recycling at the event, and help to promote recycling generally.

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.



Recycling Costs

While the data from 2005 is spotty, it appears that the Tunbridge Fair spent \$7,500 for 22.5 tons of waste generated, not including staff time. If this is the case, that amounts to a cost of \$333 per ton of waste (including container rentals, delivery and disposal of waste). The tipping fee for waste in central Vermont in 2005, including taxes and surcharges is roughly \$100 per ton, so the potential avoided disposal cost for each ton of waste that is recycled is considerable and would likely justify further recycling efforts on that basis alone.

Appendix A. Sample Recycling Containers

The Ultimate Event Container is also known as the Clear Stream. Its storage ratio of 40:1 of Clear Streams to wheeled carts saves you transportation costs, set-up time, storage space and clean-up costs. The plastic bags give you a clear visual so what you see is what you get. These clear plastic bags allow you to see when they are full and the mix of recyclables being collected while also eliminating threat of concealed, destructive devices. Use these event containers to bring in sponsorship dollars since the custom-printed decals can promote companies and the actual event.

<http://www.buschsystems.com/centralized.html>



This cardboard box system (left) was provided free of charge by a redemption center in Bath Maine for use at the Bath Heritage Festival. Different non-profit organizations “adopted” the bins as a fundraising effort.

This plastic soda bottle shaped container (right) was used at the HCS Flower Show this year. The containers were donated by the American Plastics Council to the NH Fair Association, and are kept at their warehouse between events. These containers are very useful for keeping contaminants out of the bottle and can stream.



Please Help Us to

Recycle Cardboard

at the Tunbridge World's 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!