

**WASTE REDUCTION AND RECYCLING PLAN FOR  
BATH HERITAGE DAYS  
BATH, ME**



**OCTOBER 2005**

**PREPARED BY:**

**THE NORTHEAST RECYCLING COUNCIL**

**[WWW.NERC.ORG](http://WWW.NERC.ORG)**

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**UNITED STATES DEPARTMENT OF AGRICULTURE**

# WASTE REDUCTION AND RECYCLING PLAN FOR BATH HERITAGE DAYS

## ***Introduction***

The Bath Heritage Days Waste Diversion 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 Bath Heritage Days is one of the participant events.

The Bath Heritage Days 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 Bath Heritage Days 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 32nd annual Bath Heritage Days took place on July 1-4, 2005. For the past two years, the event has been organized by the Bath Main Street Organization. The event is held in downtown Bath, along the waterfront, on various city streets and at Liberty Park. The event includes a triathlon, parade, midway, food vendors, fireworks, firemans muster, crafts fair, and several boat rides. Table 1 provides a summary of event details.

**Table 1 : Event Overview**

<i>Event</i>	<i>Bath Heritage Days</i>
Location	Downtown Bath, Maine
Organizer	Bath Maine Street Organization
Staff	Volunteers and Bath Main Street Staff
Dates	Four days (F, S, S, M – July 1-4 in 2005)
Attendance	50,000 to 100,000 over four days (estimate)
Vendors	29 non-food vendors, including 25 non-profit organizations
Food	36 food concessions
Web site	<a href="http://www.visitbath.com/heritagedays/">http://www.visitbath.com/heritagedays/</a>

### ***Material Generation and Management***

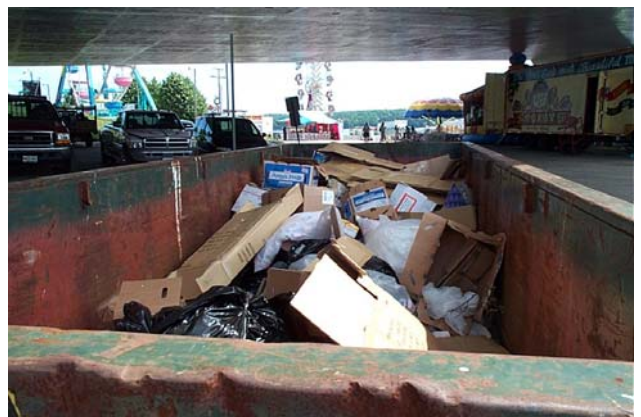
Municipal solid waste from the public spaces is collected by Pine Tree Waste in a variety of containers: thirty 96-gallon toters with wheels which are emptied three times each, three 2-yard containers emptied four times each, and one 30-yard open top container which is emptied once. The total volume of containers provided, thus, is 96.3 cubic yards, as shown in Table 2.

**Table 2. Waste Containers at Bath Heritage Days**

<i>Containers Size</i>	<i>Yards/Container</i>	<i>Units</i>	<i>Empties</i>	<i>Extension (Yards)</i>
30 yard	30	1	1	30
2 Yard	2	3	4	24
96 gallon	0.47	30	3	42.3
<b>Total</b>				<b>96.3</b>

Pine Tree Waste reported that 12,780 pounds (6.5 tons) of waste was removed from the event. Assuming 50,000 to 100,000 participants, that equates to a per capita waste disposal of 0.13 to 0.26 pounds per person.

In addition there was a 20-cubic yard container available for cardboard from vendors. There is no actual data available on the amount of cardboard deposited. However, a visual inspection of the container at the end of the event indicated that it was about one-quarter full of cardboard and also contained some trash (see photo on right). Five cubic yards of loose cardboard is estimated to weigh 250 pounds.<sup>1</sup>



<sup>1</sup> Loose cardboard weighs 50 pounds per cubic yard (EPA).



There were also numerous redeemable bottle and can recycling containers distributed by Bath Main Streets and other organizations as well.

Event organizers report that there were \$140 in returnable containers collected by two entities. Assuming 5 cents per container, this represents 2800 containers. There may have been other containers collected for redemption as well. In addition, there were 154 containers material in the waste sort (see below). These 2,994 bottles and cans are estimated

to way about 1.5 tons.<sup>2</sup>

### Waste Characterization

A waste audit was conducted on Tuesday July 5, from 9 AM to 12 PM, after the event was completed. Five individuals sorted 718 pounds of waste, representing about 6 percent of the total amount of material disposed. The material was primarily collected from the 96-gallon totes located at various public areas of the event, as well as some other bags of waste that were generated in vendor areas. Table 3 and Figure 1 provide the findings of the sort, and of an estimate of characterization of all waste generated at the event.

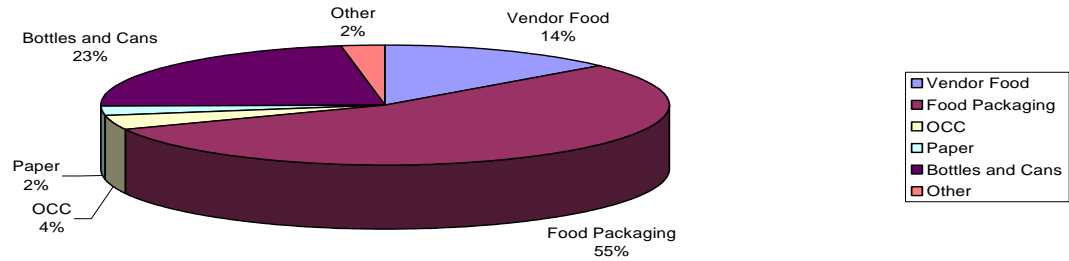
**Table 3. Bath Heritage Days Waste Characterization**

<i>Material</i>	<i>Waste Sort Data</i>		<i>Total Materials Generated</i>			
	<i>Net Weight (Lbs)</i>	<i>Percent by Weight</i>	<i>Material Disposed (Lbs)</i>	<i>Material Recycled (Lbs)</i>	<i>Material Generated (Lbs)</i>	<i>Percent by Weight</i>
Bottles and Cans	41.20	5.7%	745	2957	3,702	23%
Vendor Food	122.5	17.1%	2,214		2,214	14%
Food Packaging	488.7	68.0%	8,832		8,832	55%
OCC	22.40	3.1%	405	250	655	4%
Paper	21.40	3.0%	387		387	2%
Other	22.00	3.1%	398		398	2%
<b>Total</b>	<b>718.20</b>	<b>100.0%</b>	<b>12,980</b>	<b>3207</b>	<b>16,187</b>	<b>100%</b>

<sup>2</sup> Average weight of bottles sorted was about 1 pound each. Includes some bottles with liquid in them.



**Figure 1. Bath Heritage Day Waste Generation – Percent by Weight**



**Observations From Waste Sort**

Based on the waste sort and other information gathered, it appears that the bottle and can recycling program was very effective. At least 80 percent of the containers managed at the event were recovered and redeemed (and potentially more if other redeemed containers were not reported).



The cardboard recycling effort seemed to be only moderately successful. It is estimated that only 20 percent of cardboard was recycled based on the visual inspection of the container and the findings of the waste sort. One cause of this may be that vendors (the primary generators of cardboard at events) may not have been familiar with the cardboard recycling system, or may not have known about the opportunity. In addition, the cardboard container was somewhat out of the way and not very well marked.

Food packaging and food waste represented a combined 69 percent of material generated and 85 percent of material disposed. As the waste sort was conducted at the end of the event, a significant quantity of the vendor food waste was heavy bags of dough or other food that was not sold at the event. It is possible that less of that material would have been identified if waste was sorted from only the first days of the event.



**Recycling Communications**

Main Street Bath included mention of their recycling effort in a press release that was distributed prior to their 2005 event. In addition, Ruby the Recycling Dog, was a prominent

character in the Heritage Day parade. A reporter took pictures of the waste sort after the event, although no copy of any article was identified.

### **Waste Costs**

The itemized cost for waste management at the event was a waste disposal fee of \$2400, paid to Pine Tree Waste for container rental, waste disposal, and cardboard recycling. Recyclable bottles and cans were transported by volunteers from non-profit groups to the nearby redemption center where they were paid 5 cents per redeemable container. The labor and gas/vehicle expenses to transport the recyclables is not directly accounted for.

### ***Recycling Recommendations for 2006 and Beyond***

The Bath Main Street organization made a significant recycling effort in 2005, particularly given that it was only their second year organizing the event.

#### **Bottle and Can Recycling**

The bottle and can effort was extremely efficient and effective, and helped to provide local organizations with funds from container redemption. A similar approach should be followed in the future.

#### **Cardboard Recycling**

The cardboard effort was somewhat successful, particularly since it was the first year that cardboard had been recycled. More effort needs to be made to recycle cardboard from vendors, presumably during set up of the event. There was a considerable amount of cardboard in the waste, some of it very large pieces. Cardboard is both a bulky item, taking up space in a dumpster, as well as a valuable recyclable material, and one that is relatively easily separated for recycling once proper systems are established.

The recommendation is to ensure that vendors, staff and volunteers know about the recycling effort and what they are expected to do. Verbal and written notice to vendors about cardboard recycling is also encouraged. It would also be useful to make cardboard recycling an aspect of contracts signed with vendors (or their coordinator/organizer) early in the process. Ensure that the cardboard recycling container is located in a convenient location and is well-signed to reduce confusion. See sample sign in Appendix A.

#### **Grease Collection**

Event organizers made a decision to not recycle grease in 2005 due to time available to make arrangements. The recommendation is to either require the subcontractor who makes arrangements with food vendors to set up a grease recycling program, or for Main Street Bath to make arrangements directly. The Chewonki Foundation is one entity that would be available to deliver barrels for grease which they would collect and use for biofuel. Also, Baker Commodities provides grease recycling services in Maine.

## Food and Food Wrappings

A more ambitious recycling effort could involve food waste and food wrappers. Given that 69 of waste is estimated to be either food or consumer food packaging (plates, cups, napkins, utensils), a food waste composting program would be the most significant waste reduction activity that the event could consider.

If there is interest in such a program it would be advisable to seek assistance from the Maine State Planning Office, Waste Management and Recycling Program, whose staff assisted with the waste sort. More information on such programs will also be made available in the *Special Event Recycling Manual* that NERC is preparing for USDA.

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.

The potential savings from food waste composting would likely be around \$1000, although that does not include added costs for barrels, biodegradable materials and transporting of food waste. The reality is that this would not likely be a cost saving effort. The major reason to consider this initiative would be to work toward being a zero waste event, and to demonstrate the potential to turn all waste into valuable soil amendments, which would be an educational message that is consistent with the theme of the event.

## Recycling Budget

Following is an *estimated* budget for the recycling activities implemented in 2005. The budget is for *costs* that are different than those if waste had been disposed.

<i>Added Costs Due to Recycling (Estimates)</i>	
Signage for bottle/ can recycling area	\$10.00
Recycling bins (Provided by Recycling Center)	\$0.00
Rental and Pickup of Cardboard Recycling Container	NA
Communication with vendors about cardboard recycling (making handout, talking, showing)	NA
<u>Added</u> labor for venders to transport cardboard to recycling area	NA
Grease recycling (estimated)	\$150.00
<b>Total Added Costs Due to Recycling</b>	<b>\$160.00</b>
<i>Cost Savings/Revenue Due to Recycling</i>	
Avoided disposal costs (3207 pounds of cardboard, bottles and cans were diverted – unclear if savings were accrued)	NA
<b>Revenue from Bottle and Can Redemption</b>	<b>\$140.00</b>

## Appendix A: Sample Recycling Sign

Please Help Us to

**Recycle Cardboard**

at Bath Heritage Days

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

Located: \_\_\_\_\_

**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!**

**THANKS FOR PITCHING IN!**

