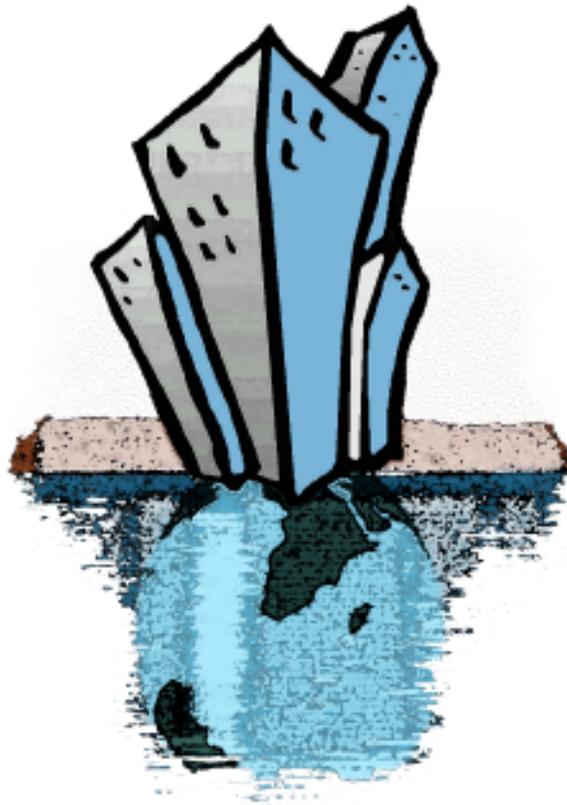


Business and the Environment: Solutions for a Changing World



Guide to Waste Reduction and Recycling at Special Events



THE
DOCUMENT
COMPANY

XEROX

*Business and the Environment:
Solutions for a Changing World*

Guide to Waste Reduction and Recycling at Special Events



The Coin

The words ecology and economy share common roots — both originate from the Greek word “oikos”, meaning “home”. These common origins illustrate the fundamental link between the environment and our economy.

Xerox Corporation
Environment, Health and Safety
800 Phillips Road, 0105-70C
Webster, NY, 14580

Copyright ©1998 by Xerox Corporation.
All rights reserved.

Copyright protection claimed includes all forms and manners of copyrightable material and information now allowed by statutory or judicial law or hereinafter granted, including without limitation, material generated from the software programs which are displayed on the screen such as icons, screen displays, looks, etc.

Printed in the United States of America

Xerox®, The Document Company®, the **X**® and the Xerox products mentioned in this publication are trademarks of Xerox Corporation.

Made from recycled and recyclable paper.



Table of Contents

Introduction	1
Organize Team	2
Analyze Waste Generation and Disposal Systems	3
Identify Alternatives to the Existing System	4
Evaluate Each Alternative	4
Design Program	4
Promote New Program to all Participants	5
Launch Program	6
Continuous Improvement	6
Other " Green" Opportunities at Special Events	7

Guide to Waste Reduction and Recycling at Special Events

Over the past 15 years, waste reduction and recycling programs have been implemented mainly in households and in the workplace (i.e., offices and factories). More recently, similar programs have been developed for special events (e.g., sporting events, concerts, and trade shows).

The Xerox Earth Crew led the implementation of a major, successful recycling program at the 1996 Summer Olympics in Atlanta. Working with the Olympic Committee and other partners, Xerox applied its experience in workplace waste reduction and recycling to this unique challenge. Millions of spectators, athletes, and media representatives were given the opportunity to recycle, in every area of every Olympic venue—in Atlanta and throughout Georgia and Tennessee. This was followed by developing and managing the recycling program for the 1997 California State Games.

While many aspects of a recycling program at a special event will be the same as in a workplace program, there are also some significant differences.

- the “target audience” at a special event is a transient population—they are present only for a matter of hours or at most a few days;
- an educational program must therefore be immediately effective—there is little opportunity to refine and improve over time, as there is in a workplace;
- the audience will typically be somewhat distracted, since they are attending a special event, rather than following a regular daily routine at work—this is not only the case at a major event like the Olympics, it is also true at a concert or a trade show;
- there will often be other unique issues at a special event (e.g., the unique security procedures that can add significant complications to a relatively simple recycling program).

Even with these unique challenges, in our experience the approach that should be followed in the design and implementation of waste reduction and recycling at special events can follow the basic framework that would apply to a workplace program. In this regard, the following eight steps have been taken from the Xerox *Business Guide to Waste Reduction and Recycling*. Use these tabs to refer to the applicable sections in the *Guide*.

① ORGANIZE	team to implement the waste reduction program.
② ANALYZE	existing waste generation and disposal system.
③ IDENTIFY	alternatives to the existing system.
④ EVALUATE	each alternative.
⑤ DESIGN	waste reduction program.
⑥ PROMOTE	new program to all participants.
⑦ LAUNCH	program.
⑧ IMPROVE	program on a continuing basis.

Each of these steps has been described fully in the *Business Guide*, in terms of a workplace program. Rather than repeating this information, this **Special Events Guide** has been written to work as a companion publication. The unique issues and applications that should be considered for a special event program are outlined in the following sections.

Points to Consider

Here are some points to consider, while reviewing the following sections of this Guide:

- 1. Make Recycling a Priority.** A *special event recycling program* will be more likely to succeed if it is treated as a fundamental part of event planning—just like food & beverage vending, cleaning, and traditional waste collection & disposal.
- 2. Start Early.** Planning for your recycling program should begin at the same time as you begin planning for the event itself. If you treat recycling as an afterthought, it will be less likely to succeed.
- 3. Do You Need Help?** Recycling at special events has unique challenges, and it's possible that you'll want to look for help. If you need help, here are some options to consider:

Community and Municipal Recycling Projects:

Your local community may have dedicated projects and staff who would welcome the opportunity to expand beyond residential or commercial facilities, to assist you in designing or operating a special event recycling program. There might be some cost, or it might be offered as a community service. *Local school recycling groups* could represent another valuable source of support for your program. Any of these types of organizations could also be a valuable source of volunteers for your event.

Consultants:

Some waste management and recycling consultants offer services that could make your program more successful. The cost will vary according to the size and complexity of your event—perhaps from hundreds to thousands of dollars, for a typical program.

Local Recycling Companies:

Local businesses who operate other recycling programs may also help. They know recycling, and may have some practical experience in other special events recycling programs. They may charge a fee for this assistance or you may involve them on the condition that they assist with design and planning.

If you decide to seek outside assistance, it's important to be sure that you're dealing with people who have worked with events of similar size and scope. There can be a major difference between a small local fair and a sporting event with many thousands of spectators. We certainly learned this lesson at the Atlanta Olympics.

We also learned that mounting a successful *special events recycling program* can be very exciting and rewarding. Besides being fun, and providing clear environmental benefits, there can be distinct marketing benefits too—you can significantly raise the profile of your company, at the event and in your community.

Organize Team to Implement the Waste Reduction Program

ORGANIZE 1

In a workplace program your team will be comprised of staff from different levels and areas of responsibility within your company. In a special event program this team will be equally important, but made up of representatives from separate firms or sectors. Typical members would include:

- the event Organizing Committee
- event staff (e.g., logistics, security, volunteers)
- event sponsors
- food and beverage suppliers and vendors
- cleaning contractors
- waste haulers

Over 1000 volunteers were used for maintaining and troubleshooting the waste management program at the Atlanta Summer Olympics.

While each of these sectors does not necessarily have to play a major role in the actual recycling program, they will all have some impact on the program's success. If they are involved and informed early in the process, they will be able to support the program more effectively.



Above is pictured a portion of the Xerox Earth Crew.

Analyze Existing Waste Generation and Disposal System

In a workplace program there will often be a waste system in place, with useful historical data. In a special event program it is more likely that historical data will be limited or non-existent, even if the event has been held previously (e.g., an annual sporting event).

In the Analyze section of the *Business Guide*, the focus is on an examination of something that is already in place. For a special event analysis, the focus will likely be more on plans (i.e., projections) than on historical information. In this regard:

At the Atlanta Summer Olympics, source reduction measures diverted 300,333 pounds of usable food to feed the poor.

- **food and beverage suppliers and vendors will typically be able to provide useful data regarding expected sales, by type of container or package;**
- **this information can be used to develop reasonably accurate projections for waste stream quantities and composition;**
- **the details produced through this analysis can be used to guide design of the event recycling program.**

In an ideal world, your analysis will be done at the same time as others are beginning the design of their particular components of the special event. However, this is not always possible. While your program will be more effective if given the chance to influence purchasing decisions of other suppliers, your program will still make a positive impact upon the waste stream if designed after other plans have been established.

A special event waste management and disposal system will typically be much simpler than a household or workplace system. Much of the waste will be generated through the food and beverages consumed by participants and spectators. There will possibly be packaging (e.g., cardboard boxes) used for products that are sold at the event. And there will likely be paper wastes generated in media and office areas serving the event.

At the Atlanta Summer Olympics the recycling program consisted of:

- **can/bottle bins in all areas where beverages were consumed (spectators, athletes, media);**
- **paper recycling bins in all media and office areas;**
- **cardboard recycling from warehouse and vending facilities;**
- **food waste bins (for composting) in dining areas of the Olympic Village.**

While this might seem quite limited in comparison to the array of materials and systems in a household, office or factory, this program accounted for about 85% of all waste generated at the Olympics.

Identify Alternatives to the Existing System; Evaluate Each Alternative; Design Waste Reduction Program

IDENTIFY	3
EVALUATE	4
DESIGN	5

These steps can be less complicated for a special event than for the kinds of situations outlined in the *Business Guide*. In summary, these steps involve the following:

1. **Identify potential recyclables (e.g., cans, bottles, cardboard, food waste, paper);**
2. **Identify the total number of waste bins/containers that will be used in each area where target items will be discarded;**
3. **Identify the most effective handling method—e.g., different colored plastic bags—to move recovered material from the point of discard to the central collection area;**
4. **Determine the most effective method for handling separated streams of material at the central collection area (typically the “back door”, or shipping dock), and the most effective collection method.**

During the Atlanta Summer Olympics, over 15,000 recycling bins were used to collect recyclables.

In most cases special event recycling will involve the simple use of two bins, where one bin would have been used formerly. But the same total volume of material will be handled by the system, so there will not necessarily be twice as many bins and containers required.

At first glance this may seem illogical. The following example can help to illustrate the point.

If we assume that a particular food and beverage vending area of a stadium is going to generate 10 cubic yards of waste per day, then we may design a waste system with 10 waste bins—each holding one cubic yard. If half of this waste is recyclable cans and bottles, and the other half is non-recyclable waste, it is possible that a waste reduction system could be implemented using 10 bins in total—5 for waste and 5 for recyclables.

While a recycling system may in fact require some additional equipment—bins, bags, and so forth—it is unlikely that the additional requirements will represent a significant cost increase. And in most cases a modest cost increase will be more than offset by two factors—reduced disposal costs, and/or revenue generated by the sale of recyclables.

When **identifying** and **evaluating** operating costs, some of the same principles will apply.

- **in general, cleaning and waste hauling contractors will not be handling any additional volumes of material—they will simply be handling the same volume, but separated into two or more streams;**
- **while there may be some modest cost increase—due to additional time/labor involved in handling separate streams of material—these costs can also be offset by material revenue and/or reduced disposal costs.**

Promote New Program to all Participants

The promotional campaign used for a special event recycling program should be designed with the target audience and the unique circumstances in mind. First, it is important to note that a special event will have two relatively distinct audiences,

1. **The individuals who are involved in the event itself in some way (e.g., athletes, event staff and volunteers, media representatives, and so forth);**
2. **The spectators, who may be in attendance only for a relatively brief period of time.**

With the first audience—those involved in the event—there is some potential for prior training and education. And there is also a good chance that these individuals will be present throughout most or all of the event.

With the second and typically larger audience—the spectators—there is a need to utilize education methods that are very immediate in their impact. Some examples:

- **simple and highly graphic printed materials, distributed at key points of contact (for the 1996 Olympics, Xerox produced a small brochure, in the 3 Olympic languages, for distribution in all hotels);**
- **simple and highly graphic signs that provide the basic instructions for participation—ideally at eye level or above, on the recycling bins and, if possible, on walls above and behind the bins;**
- **reminder announcements read over the public address system throughout the event;**
- **if possible, graphic reminders on the electronic scoreboard.**

Color becomes a key factor in designing this type of educational campaign. In Atlanta it became very obvious to all spectators that dark green bins were for waste, whereas a blue bin with distinctive red recycling arrows was always the point of deposit, for cans, bottles, paper, and so forth. The same color scheme and graphic images were used for signs, bins, printed material, and the uniforms worn by Earth Crew volunteers.

In our experience, the creation of a good volunteer crew can make a major contribution to the educational campaign. In Atlanta there were hundreds of Earth Crew volunteers moving through all of the venues, reminding people to use the recycling system. They served to push the crowds in the right direction, where group dynamics and crowd behavior took over, and they also played a key role in “troubleshooting” for the whole recycling system.

**Launch Program;
Improve Program on a Continuing Basis**



Recycling bins, teamed with waste bins, were found throughout the spectator, media and Village areas. Pictured above is a recycling bin, paper recycling bin, and garbage container located in the media area.

In a workplace program, the launch timing can be set in whatever manner best suits program success and relevant factors in your workplace. As noted in the *Business Guide*, you can utilize a pilot phase to help refine the program, prior to full-scale launch. And there will then be an opportunity to monitor and refine the program, over a period of weeks or months.

The launch planning and timing for a special event program will essentially have to fit all planning and timing factors of the event itself. And the opportunity for monitoring and refinement will be very limited—this cycle will likely be reduced to one or a few hours.

Clearly design the **launch** phase to fit very tightly with the overall event plans set by the organizing committee. A careful review of the event plans, and the involvement of event staff in key areas such as logistics and security, may provide the basis for planning for launch of recycling efforts. If you are able to carry out your planning against a clear and fixed set of overall event plans, this can actually make your job easier.

The opportunity for program **improvement** may be quite limited, but it is still very important to make allowance for a “troubleshooting” component in your overall recycling plans. The valuable role that volunteers can play in this regard was mentioned earlier. As a volunteer moves through an event facility, they can identify and quickly correct (directly, or by reporting it to event staff) many system problems.

There is a greater opportunity for continuous improvement if a series of events is being planned. Learning from the first event can be used to refine and improve performance at subsequent events in such a series.

Other “Green” Opportunities at Special Events



For identification purposes, it is traditional that a clear or translucent blue bag is used to line a recycling container, while a black or dark green bag is used to line a waste bin. In this picture, the wrong bag was placed in the recycling bin—a mistake that this Earth Crew member is correcting.

In the previous sections of this **Guide**, the primary focus has been on recycling. There are clearly many other environmental initiatives that can also be considered as part of a special event program.

Ideally, waste **reduction** and **reuse** are considered ahead of recycling. Organizers of special events tend to resist some of these concepts, since they can present a challenge in temporary settings. Still, innovative systems work.

One of the world's largest environmental trade shows, in Munich Germany, utilized a reusable beverage system to serve several hundred thousand customers. Durable plastic glasses were used to dispense soft drinks, and customers were charged 1DM (about \$2.00) as a deposit. To reclaim their deposit they had to return the glass to one of the dozens of food kiosks, where it was sent to a central point for washing and reuse. Hundreds of thousands of disposable "packages" (cans, bottles) were avoided through this system, significantly reducing total solid waste generated at the event.

In working to identify similar opportunities for a particular special event, the key area to examine, given the nature of most events, is the food and beverage sectors. How will food and beverages be distributed? Are there opportunities for reduction and/or reuse? Will sponsors or vendors agree to cooperate in looking for greener alternatives?

Beyond solid waste, there are possibilities in areas such as:

- **energy conservation**
- **water conservation**
- **avoidance of toxic material usage**
- **facility design for enhanced environmental performance**
- **educational campaigns for environmental topics beyond recycling**

Increasingly there is support for including a focus on environmental issues and programs in special events, especially those involving sports and culture.



Checklist summary

Organize Team

- Present waste reduction program idea
- Enlist sponsor and Organizing Committee support
- Seek out appropriate team members
- Introduce all members of team
- Develop meeting schedule
- Decide on means of communication
- Develop workplan and set timelines

Analyze waste generation and disposal systems

- Contact food and beverage suppliers and vendors to collect anticipated sales data
- Predict generation trends
- Estimate material composition
- Identify generation areas

Identify waste management program alternatives

- Identify potential recyclables
- Identify the number of waste containers that will be used in each area where materials will be discarded
- Identify method of moving recovered material to the central collection area
- Determine handling method for separated material at the central collection area, and the collection method

Evaluate each alternative group

- Estimate capital and start-up costs
- Estimate operational costs
- Calculate impact on disposal costs
- Calculate expected revenues

Design program

- Determine locations for intermediate bins
- Determine central storage location
- Negotiate standardized set of collection containers
- Check restrictions with fire marshal and insurance company
- Determine how and when containers will be emptied
- Assign collection responsibility
- Assess your material handling equipment needs
- Arrange dock space
- Determine collection frequency
- Determine pricing structure
- Develop payment procedure
- Develop record keeping and reconciliation procedures
- Assign monitoring responsibilities to team members and volunteers
- Ensure monitoring framework is in place
- Develop contingency plan

Promote program

- Design and order program materials
- Design employee presentation
- Inform new employees of program requirements

Launch program

- Ensure material is picked up regularly
- Maintain financial and generation records
- Ensure containers are in place
- Ensure promotional materials are in place
- Ensure all employees are informed of program
- Ensure schedules are established

Improve program

- Develop ideas to ensure that promotion remains dynamic
- Solve start-up problems
- Keep in contact with vendors
- Encourage questions and problem reporting
- Track program results
- Hold regular team meetings
- Regularly report progress