

## Step 1: Setting Priorities

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Setting priorities involves using the information gathered in the waste audit to identify the specific waste materials you will address in your waste reduction program, and in what order.

In addition to reflecting the organization's stated waste reduction goals and objectives, your waste reduction plan should outline priorities based on answers to the following questions.

### **What materials comprise a large percentage of your waste stream?**

- *By weight?*
- *By volume?*

### **What materials can be addressed most economically?**

- *Are there materials with high revenue potential?*
- *Are there materials with high internal costs of disposal?*
- *What materials can be addressed to produce maximum diversion for minimum cost?*

### **What materials can be easily separated from other materials?**

- *Some materials may already be source separated and, therefore, represent easy targets.*

### **What are the current and potential regulatory requirements?**

- *Landfill bans, etc. (contact your regional district or municipality).*
- *Other materials may be subject to reuse limitations or health restrictions (contact the B.C. Ministry of Environment or Ministry of Health).*

### **What is the situation regarding disposal availability?**

- *There may be landfill closures or landfill disposal limitations planned that might impact disposal availability in the future (contact your regional district or municipality).*

### **Are there any operating space constraints?**

- *What is the current and future availability of on-site storage space?*

### **Are there any specific “problem materials” that must be managed?**

- *You may produce waste materials that are priorities because they are particularly difficult to dispose.*

### **Are there any materials with high public profile?**

- *Waste materials that are the focus of public attention may be priorities.*

It's important to note that because priorities change over time as progress is made, they should be reviewed regularly.

## Step 2: Exploring Waste Reduction Options

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After you've identified materials that represent the most effective areas of action for your organization, the next step is to consider your waste reduction options. Reduction, reuse, and recycling (3Rs) provide opportunities to cut waste management costs and improve production and operating efficiencies. During this step you will identify and assess reduction, reuse and recycling opportunities for each of your organization's areas and functions. The chart below will help you identify opportunities for reducing, reusing, and recycling priority waste materials (see potential opportunities in the ICI Guide and industry-specific handouts.) After reviewing your options, you can select those appropriate to your organization. Consider all possible effects of implementing any particular option. For example, if you switch from paper to china dishes in your cafeteria, what effect will this have on labour and energy for dishwashing? And on water usage?

Waste Material	Reduction Options	Reuse Options	Recycling Options
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			

## Step 3: Conducting Cost/Benefit Analyses

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Cost/benefit analyses list and quantify costs and benefits associated with specific reduction, reuse, or recycling options. They are used to determine if a particular option is feasible and to select preferred measures from among all available options. Costs are typically itemized as capital or operating costs. **Capital costs** could include equipment, building alterations, site preparation, and the production of promotional/educational materials. **Operating costs** might include administration, staff time, collection costs, equipment maintenance, and replacement costs. **Economic benefits** might include reduced disposal costs, revenues, increased efficiency, and reduction in raw materials used. **Indirect benefits** could be improved employee morale (often resulting in increased productivity and/or reduced staff turnover), improved corporate image, improved community relations, generation of new ideas for efficiency improvements, new in-house skills and expertise involving environmental technologies, and improved customer/supplier relations. These could be substantial and, in some cases, may outweigh all other considerations.

**Waste material:** \_\_\_\_\_

Reduction Options	Capital Costs	Operating Costs	Economic Benefits	Indirect Benefits	Overall Ranking Among all Options

### Reuse Options


### Recycling Options


## Step 4: Designing a Waste Reduction Program

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It is necessary to design a program for implementing each of the source reduction, reuse, or recycling options you select. Waste reduction programs can range from very simple adjustments to purchasing practices to highly complex recycling programs. Further, each organization and each facility will have unique system requirements.

**Source reduction** systems typically include:

- modifications of purchasing policy to reduce the amount of packaging materials entering the facility;
- changes in operations to eliminate waste (e.g. requiring all staff to use double-sided photocopies); and
- adjustments to production processes to increase material utilization efficiencies.

**Reuse** systems typically involve:

- systems for the recovery and storage of items to be reused (e.g. pallets, packing containers);
- re-loading or re-installation of reusable items (e.g. re-loading scrap paper into photocopy machines for second-sided copying); and
- operational changes to ensure reusable items are returned (e.g. return of spent laser printer cartridges).

*It is important to think through system implications of even the simplest source reduction or reuse measure to anticipate operational issues and problems.*

**Recycling** involves the collection, storage, and marketing of source separated materials. Source separation is defined as the purposeful segregation of materials from municipal or commercial waste into specific material types at the point of generation to facilitate recycling. Some examples include:

- the separation of office paper from other office waste into recycling containers at desks, photocopiers, and printers;
- the collection and flattening of cardboard boxes at the point where they are emptied on the production line; and
- the provision of recycling bins in the cafeteria for newspapers, beverage cans, and glass bottles.

In addition to materials that must be source separated according to provincial, regional, or municipal regulations (e.g. due to landfill bans), you will want to consider recycling materials that: 1) have been identified as priorities during your waste audit; and 2) have markets. If you are unable to locate markets for certain materials, you can investigate opportunities through the BC Materials Exchange at 1-800-667-4321.

**Steps required to design recycling systems include:**

- selection of collection methods and equipment at point-of-waste generation (e.g. desk-top holders, bags, bins, roll-out carts, etc.);
- design of systems for moving recyclables within the facility from the points of generation to the points of marshalling, storage, and loading;
- negotiations with a recycling collection contractor(s) for pickup; and
- negotiations with markets for materials you will be selling directly.

## Step 4: Designing a Waste Reduction Program (cont.)

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### Helpful Hints

#### Collection:

You may need containers for each individual generator (e.g. desktop containers for paper or rollout carts to collect cardboard on a production line). In addition, you may need containers/methods to consolidate materials (e.g. larger containers in central location that individuals or maintenance staff empty their containers into or collection containers beside photocopiers for paper). The type, size, and number of containers, or the specifications for a storage area, will depend on: the type of material being collected; market specifications for the material; physical characteristics of the material; physical characteristics of the generating station; quantities of materials at each generating station; length of time between pick-ups; and availability and location of storage.

- Complement current procedures where possible. It should be as easy to recycle as it is to dispose.
- If possible, design to allow flexibility (e.g. relatively autonomous departments may use different collection systems).
- Place clearly signed/labelled containers near points of generation to achieve maximum recovery rates.
- Make sure containers are compatible with any equipment that might be used with them (e.g. loading into trucks).
- Check to see if containers are available from your recycling contractor before buying them yourself.
- In high-traffic areas (e.g. cafeteria), locate garbage containers alongside recycling containers to prevent contamination.

#### Storage:

- Determine storage space requirements and limitations (e.g. fire codes) early in the design of your waste reduction program.
- Ask your maintenance or building supervisor to help you identify adequate storage space.
- You may not need a specially-designed room for storage; be creative if space is not readily apparent.
- Choose storage areas close to generation and pick-up points.

#### Roles and Responsibilities:

- Movement of materials will likely involve internal staff (e.g. maintenance staff) or external contractors (e.g. cleaning contractor). Ensure these new responsibilities do not conflict with contracts.
- The cooperation of staff and contractors can make or break your recycling program. Consult with them in planning, make their duties as convenient as possible, include recycling duties in job descriptions, and ensure they share ownership in recycling initiatives.

## **Step 4: Designing a Waste Reduction Program (cont.)**

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### **Negotiating Recycling Collection Services**

After designing your recycling program, you will then select a company to collect your recyclables. This could be your waste hauler, a private recycling operator, or the end market. You can find these services in your yellow pages, or by contacting your municipal or regional recycling coordinator.

Here are questions to ask potential recycling contractors:

- Will you collect all materials I wish to recycle?
- Is there a fee for the collection of recyclables? How is this fee calculated (e.g. flat rate or per visit)?
- What do you do with the different materials collected?
- What are your specifications for contaminants in recyclable materials?
- Do you provide free collection containers? What type and how many?
- Am I required to purchase additional containers? At what cost?
- What are your collection and loading requirements?
- Do you provide other services (e.g. shredding)?
- What is the collection frequency (weekly, bi-weekly, as-needed)?
- Will I receive any revenue for materials?
- Will adding this service affect my current waste disposal fees?
- Do you provide regular reports on quantities collect?
- Do you provide free promotional materials (e.g. posters and brochures for internal promotion and education)?
- What are your standard contractual arrangements (e.g. length of contract, flexibility)?
- Who do I contact in the event of a problem?

### **Marketing Recyclables**

In most cases, your recycling contractor will sell your recyclable materials to an end market for you. However, it is possible that you may sell materials directly to an end market, depending on material type, volume, and pricing.

#### **Key points to remember are that:**

- Market specifications, which are usually set by end markets, determine collection and processing requirements (i.e. you must ensure that your recycling systems produce materials that meet specifications).
- End markets require quality, volume, and consistency.
- Any significant fluctuations in material volumes (e.g. seasonal variations in facility operations) must be considered in program planning.
- In most cases, negotiations with end markets involve the same set of issues that arise when dealing with recycling collection contractors.

## **Step 4: Designing a Waste Reduction Program (cont.)**

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### **Special Considerations for Small-Quantity Generators**

If you generate only small quantities of recyclable material but would still like to recycle:

- You can likely arrange recycling collection service, but it may be costly. Therefore, you should first check to see if your municipality will collect recyclables on its regular run or if it has a special route you can take advantage of.
- If not, try calling a few recycling collection contractors to determine their minimum volume requirements. You may generate just enough to meet the minimum.
- Alternatively, you may be able to join with other facilities in your area to arrange a common collection system with an end market.
- As a final option, you may decide to collect the material and have someone on staff take it home for curbside collection or to a recycling depot.

If you are part of an industrial park, shopping mall, or office complex:

- Merge your recycling efforts with those of other businesses or associations to establish a cooperative program.
- Jointly solicit the support and participation of your complex's property managers. This will enable you to share expertise; combine training sessions; collect larger volumes, thus attracting better deals from service providers; and share cost and space for storage and recycling at a convenient spot within the complex.

## Step 5: Revising Procurement Policies and Procedures

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Buying recycled products creates markets for recycled materials. It reduces the need for cutting, mining, and extracting new raw materials. **If you're not buying recycled products, you're not really recycling.** Follow these four steps to revise your procurement policies and procedures.

- 1) **Review current products and product specifications.** Examine all items that you buy. Which of these could be made of recycled materials but are not? Do you have outdated or unnecessary product specifications? Do the specifications impede your purchase of recycled goods?
- 2) **Develop a corporate purchasing policy for recycled goods.** Establish company-wide purchasing rules for recycled products. The likelihood of purchasing recycling products is much greater when top management takes the lead and encourages the entire company to purchase recycled products. Talk to other business people about creating a cooperative purchasing strategy.
- 3) **Develop minimum-content standards and price preferences for recycled products.** Many manufacturers still have to be convinced to provide recycled products at competitive prices. The technology is available but the demand hasn't fully developed. By specifying that certain items your business buys must have a minimum percentage of recycled content, you'll encourage manufacturers and suppliers to provide the kinds of products you want. As well, by allowing a five to ten percent price preference for products with recycled content, you'll demonstrate that you're willing to pay a bit more for environmentally-sound products.
- 4) **Modify product bidding procedures.** Several simple modifications to your bidding procedures will help encourage suppliers to find the recycled products you're looking for. Restructure your bidding system to:
  - allow separate bids for items with recycled content;
  - break large orders into smaller ones to prevent shutting out suppliers who may be able to fill partial orders;
  - allow for the introduction of competitively-priced recycled products during contract bidding;
  - allow for bulk purchasing of recycled products beyond your specific needs, to decrease price; and
  - be persistent – don't give up if your supplier is temporarily out of recycled products.

### It's also important to:

- Acquire a basic understanding of waste reduction processes and related terms (e.g. recycled content, recyclable, post-consumer, etc.).
- Become familiar with standards affecting the purchase of environmentally-friendly products and services. For example, explore the Environmental Choice program (see **Solid Solutions Business Guide**, page 14).
- Beware of environmental opportunism. An example is manufacturers who claim their product contains recycled material when, in fact, it contains in-plant scrap that has been recycled back into the product. This does not qualify as a valid post-consumer, recycled-content product.
- Investigate your current purchasing practices to ensure there are no prohibitions or limitations on the use of reclaimed materials.
- Contact your suppliers to find out if they offer an environmentally-friendly line of products. If not, encourage them to do so or switch to suppliers that do.