

Steps to reduce waste management and disposal costs

Waste assessment steps:

This document provides a basic step-by-step guide to developing a waste management program and can help to estimate the current cost of waste disposal. Used in conjunction with the 'Nursery waste self-assessment form' and the 'Waste management cost calculation worksheet' it can help to identifying alternative waste management options. This process will step you through a waste audit and help calculate waste quantities and disposal costs. This process can be as simple or as extensive as required depending on the level of detail applied at every step.

The assessment process can be broken down into 8 steps -

1. Setting goals – Why do a waste audit - cost reduction or resource efficiency?
2. Calculating the current cost of waste management and disposal to your business.
3. Conducting a waste audit to identify and quantify the types of waste generated.
4. Identify what operating practices can be changed to reduce waste generation.
5. Identify what alternative waste disposal options are available to reduce waste disposal costs.
6. Compare your current waste management and disposal costs to the estimated costs associated with alternative waste practices.
7. Implement new waste management practices and monitor on a regular basis.
8. Re-assess waste generation after 12 months and re-evaluate disposal options and waste services in your area.

Completing steps 1 to 4 will give you a better understanding of how your business generates waste and whether any operational changes can be made to reduce waste costs. In some cases these first four steps are all that is needed to reduce waste generation or increase waste management efficiency.

Steps 4 to 8 can help to identify alternative waste disposal options, develop a new waste management plan and cost estimates. Once a waste management and disposal plan is in place a simple reassessment should be conducted every 12 months or when production practices are changed to maintain waste management efficiency. Also waste disposal and resource recovery methods are constantly being developed that can add value of your waste, monitoring changes in the waste industry and in your local area could provide a new avenue of waste disposal and cost reduction.

1) Setting goals

It is necessary to understand why you want to assess you waste to set realistic targets. Answering these simple questions will provide the direction and process of your waste reduction plan.

Do you want to change your waste management practices to -

- Reduce waste disposal costs only?
- Reduce the volume of waste generated?
- Reduce the environmental impact of your business?
- Increase resource use efficiency?

Reducing disposal costs without reducing the volume of waste generated is hard to do and will require negotiating with your current or prospective waste service providers to obtain the best price for waste removal. Most waste collection companies are now providing a range of waste disposal services and can help you decide on which service suits your needs. There are also online services that can help to identify which waste disposal services will suit your business, for example 'Waste Choices' (<https://www.wastechoices.com.au/>) can help to find a waste service provider, or the 'Business Recycling website' (<http://businessrecycling.com.au/>) provides a database of recycling services by location. Reducing waste disposal costs while under a set price contract can make cost reduction harder and re-negotiating your waste contract may be the only option available to you.

Minimising costs by avoiding the generation of waste is a more effective method but this will require assessing your current operational and purchasing practices to reduce the importation of waste materials. If reducing the environmental impact of your business is the driving force for waste minimisation then costs may or may not be reduced depending on your commitment and available waste services in your area.

No matter what the reason for implementing a waste minimisation program, you must be aware that waste disposal costs may not change significantly. The lack of infrastructure needed to collect, transport, sort and re-direct large quantities of waste may not be available in your area. It is worth checking with your local charity and environmental groups, in some cases, these groups have a free recycling program that may help to reduce disposal costs but options are limited.

2) Calculating the cost of current waste management and disposal:

Using available accounting and production records fill in the '*Waste management cost estimate worksheet*' or the '*Waste management cost calculation spreadsheet*' to calculate what waste management and disposal is costing the business over a year. This is the base waste management cost according to economic measures, but these values may not fully capture what your waste is actually costing your business. You must also include any staff hours or equipment costs associated with onsite waste collection. Also include a proportion of any maintenance or administration costs associated with managing onsite waste. The calculation spreadsheet can also help in conducting a basic economic comparison of alternative waste management practices and possible benefits obtainable.

3) Conduct a waste audit or survey:

The main step in reducing waste costs, implementing a waste management plan or identifying alternative waste disposal options is to identify exactly what types and how much waste your business is generating. This is done by conducting a waste audit or assessment. There are three basic types of audits that can be conducted depending on the levels of detail required. The three audit type are -

- Desktop analysis – an estimate of costs associated with waste management from known wastes and waste disposal documentation.
- A visual inspection – a walk-through survey or audit to record waste sources, types and quantities generated in each production area.
- Waste characterisation – the physical separation and sorting of waste into specific categories e.g. general, hazardous, compostable, recyclable, reusable, etc. to quantify the actual volume of each waste generated over a month or year.

The more comprehensive the audit, the more time it will take but greater the accuracy and more realistic the cost calculations. A more accurate audit will also provide a better estimate of waste quantities being generated and the frequency of generation. This is valuable information when negotiating with the waste collection or recycling service. The '*Nursery waste self-assessment survey form*' has been developed to assist with the auditing process. Using this document will step you through the waste assessment process.

To ensure an audit provides a true overview of the waste generated and to encourage a long-term successful waste management program, all staff members should be included in the assessment process. Ask the staff's opinion on what should be recycled or what alternative disposal options are available. Encouraging staff involvement in the process will reduce training requirements and increase the long-term commitment to waste reduction.

4) Identify operating practices to minimise waste generation:

Once a waste assessment has been conducted, waste quantities are calculated and the main waste issues identified, ask these questions -

- What waste is generated the most?
- Which waste contributes the most to the cost of disposal?
- Can the waste be reduced through improved operating procedures?
- What purchasing practices can be changed to reduce waste importation?
- What established recycling services are available to divert materials?
- What alternative disposal options can be adopted for responsible waste disposal?

Assessing the production processes, purchasing practices and training staff in waste minimisation techniques can help to increasing resource efficiency and reduce waste generation. Implementing one small change in a production process or the installation of more efficient equipment can increase resource use efficiency and reduce the purchase costs. Changing your purchasing practices to avoid importing potential waste materials will reduce general waste disposal costs. Purchasing resources in bulk or from supplier who use less packaging will reduce the volume of waste generated. Unfortunately, waste minimisation is not dependent on production practices alone, it relies on the commitment of the staff to separate waste at the point of generation, and the available recycling services in the business area. Alternative options in one area may not be available in another and it is up to each manager to explore what alternative options are available to them.

If waste minimisation techniques have been implemented and waste generation is still an issue, the next step is to determine whether particular waste types can be recycled or diverted to reduce waste disposal costs. Again this will vary from area to area due to the waste disposal or resource recovery services in each location.

5) Identifying alternative waste disposal options:

Alternative waste disposal options may not actually be the physical disposal of waste in traditional terms. It can be the recycling, reuse, or the diversion of a waste material from the traditional waste stream to another industry for the same or different purpose. What may be seen as a waste material

in one business can be a resource in another business or organisation. The waste type, quantity and contamination level will determine the value of the waste material to another business.

Resource recovery services will improve as the value and demand for waste materials and products made from reclaimed materials increases. For now the best method is to identify the waste types and quantities that contribute the most to the waste costs and check what recycling options are available or if these materials are of value to another business. A good place to start is the Business Recycling website to search for waste processing companies in your area. Alternatively contact a waste collection service and ask what waste materials they recycle.

Separating wastes into categories such as general waste, greenwaste, cardboard and paper recycling, soft plastic and hard plastic recycling, and other recycling, can increase the collection value of your waste, reduce collection frequency and potentially turn a waste material into a tradable commodity. Increase the collection value of your waste material by restricting contamination, sorting, compacting, storing, reprocessing or repackaging the waste materials. Use a baling machine to compact recyclables and reduce storage space. The main purpose of these methods is to reduce the collection frequency and increase collection value of the waste material.

6) Compare current and alternative waste disposal costs:

Once the alternative waste disposal options are identified and any associated cost estimates obtained, compare the current waste management costs calculated in step 2 with the new alternative waste management costs. Use the '*Waste management calculation cost worksheet*' to help compare costs. Implementing a new waste management plan should decrease overall waste management costs, however in some circumstances costs can remain the same or increase slightly depending on the transport distance. If this is the case consider the goals set in step 1 and whether the costs are acceptable. If the costs are not acceptable then re-assess disposal options and/or waste service providers before changing any current practices. If the new waste management practices and costs are acceptable then develop an implementation plan.

7) Implement new waste management and disposal plan:

A waste management plan is the establishment of management practices that strategically aims to reduce, recycle, divert or dispose of all waste items in compliance with local, state and federal regulations. Controlled or hazardous wastes must be managed according to legislation otherwise severe penalties and legal action can be incurred.

A waste management plan can be a complete redesign of all waste management procedures onsite or the addition of a single management option such as separating plastic growing containers from general waste. Step-by-step instructions and factsheets on implementing a waste disposal plan are available from various local, state and federal government agencies as well as from most waste collection companies and environmental organisation websites.

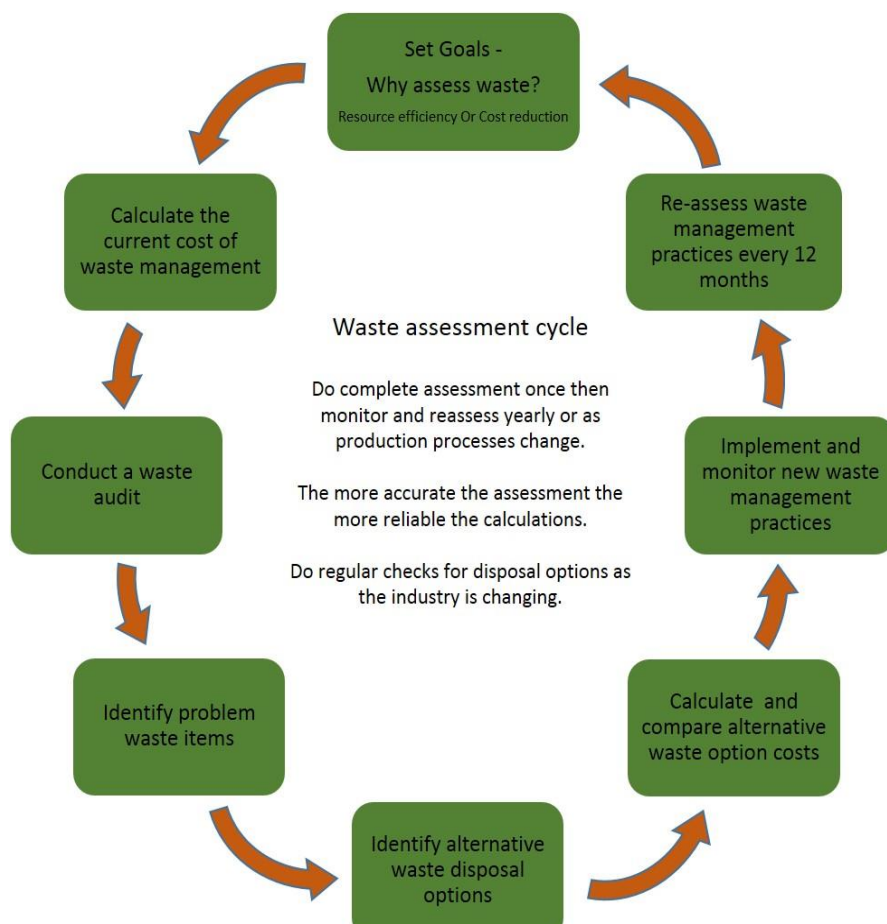
Do not make major changes all at once without a well-developed implementation program including staff training and waste collection services confirmed. Trying to implement a new waste management program ad-hoc can lead to miscommunication, confusion and interrupt production. If you are uncertain of how to implement a new waste management program contact your waste collection

company, many will offer a waste assessment and management plan development as part of their service. The basic steps to implementing a new management program is

- know the disposal method for each waste type and engage the collection companies
- identify onsite waste collection points, prepare site, organise appropriate bins and signage
- determine date of implementation and confirm or cancel service providers
- train staff and confirm implementation date
- implement new waste management plan
- monitor and adjust procedures as required

8) Re-assess new and old waste practices:

After implementing a new waste management program it is recommended that the procedures are monitored regularly for the first couple of waste collection cycles to ensure smooth operation. Check again at three and six month intervals to ensure the procedures are effective. It is also good practice to re-assess your waste management program yearly or as production processes change to capture any increase in waste types or quantities. This may involve a complete re-assessment of waste management practices or a simple walk-through to ensure bins and signage are appropriate, and processes are working as planned. Also regularly check the business recycling website and your waste collection service for any changes in disposal options in your area.



The Waste Assessment Cycle