Waste management cost estimate worksheet for production nurseries

This worksheet has been developed to assist in estimating the current cost of waste management and disposal for a production nursery, and help estimate the cost of implementing a new waste reuse, recycling or diversion program.

Waste management and disposal costs will vary depending on the services used, the type and volume of waste materials generated and the distance from a recycling service provider. It may be necessary to contact your local waste collection or recycling services to identify what services are available and the cost of that service.

The availability of services will determine what waste materials can be redirected from general waste and what savings maybe possible. It is important to remember that even if costs are not reduced, implementing a new waste management plan can provide other benefits including a marketing opportunity to promote your environmentally responsible waste management practices.

For best results use this worksheet after completing a waste assessment and identifying any alternative waste disposal options. The results of the worksheet are only as accurate as the information entered and does not account for any changes in future disposal costs. For a complete cost-benefit analysis of waste management for your business including forward estimates you should contact a professional waste auditor to discuss what options are available.

1. Calculate current waste management and disposal costs

Using accounting records and estimates, calculate the current cost of waste management and disposal for your business. Include any expenses associated with waste collection and disposal such as, staff labour, equipment maintenance costs and fuel costs. Also calculate any income currently received from recycling or diverting waste materials. Subtract any income from the subtotal of gross costs to obtain a net cost for your current waste management program.

Current waste management and disposal costs - Before changes	Monthly ($)	Annual ($)
Cost of general waste collection services		
Cost of current recycling services (if not included in professional fees above)		
Other disposal fees (e.g. council dump fees or single skip rental)		
Combined staff labour associated with on-site waste collection		
Equipment costs for waste collection (e.g. forklift/tractor fuel)		
Cleaning service costs (if contractor used to clean waste bins)		
Other:		
Subtotal =		
Subtract income from any current recycling, reuse or redirection		
(A) Net cost of current waste management program =		

2. Set-up costs of an alternative waste management and disposal program

Calculate the cost of setting up an alternative waste management and disposal program. These are one-off costs associated with implementing a new waste management program and not the ongoing operating costs. It may include washing or sterilisation equipment for reusing growing containers or special bins and signage.

Set-up costs of a new waste management program	Monthly ($)	Annual ($)
Specialised equipment purchase (e.g. baler, bins, steam generator)		
Installation costs of specialised equipment (e.g. subcontractor fees)		
Associated equipment costs (e.g. signage, paint, safety barriers, etc..)		
Staff labour costs		
Staff training costs		
Other costs		
(B) Total costs of setting up new waste management program =		

3. Ongoing costs of an alternative waste management and disposal program

Calculate the ongoing costs of an alternative waste management and disposal program.

To estimate the change in general waste disposal costs due to diverting recyclables, firstly calculate the general waste disposal costs for one month, then calculate the cost for one bin. Next, estimate the volume of recyclables in bin size equivalents (e.g. *X* m^3) to be diverted. Then multiple the bin size equivalents of diverted recyclables by the collection cost of one general waste bin. This will estimate the potential reduction in general waste disposal costs due to removing recyclables from the general waste.

For example:

A nursery uses 6, $3m^3$ general waste bins collected once per week costing $25,000 per year (from accounting records). A waste assessment identified that $1m^3$ of soft plastic packaging and $2m^3$ of cardboard packaging can be diverted per week from general waste to recycling. That is 1, $3m^3$ bin diverted from general waste per week or 52 bins per year.

To estimate the potential reduction in current general waste disposal costs, divide your current yearly general waste collection cost by the number of collections per year to obtain a cost per collection period. Then divide the cost per collection period by the number of bins collected to get an average cost per bin per collection period.

Calculations: $25000 divided by 52 weeks = $480.77 per week

$480.77 per week divided by 6 bins = $80.13 per $3m^3$ bin per week

If 52 bins of recyclables are diverted per year

52 bins x $80.13 = $4166.76

The potential reduction in general waste disposal costs over the year is $4166.76

Subtract this value from your current waste disposal costs to estimate the new costs.

Ongoing operating costs - After changes	Monthly ($)	Annual ($)
Cost of general waste collection services		
Cost of new recycling services (if not included in professional fees above)		
Other disposal fees (dump fees for one-off waste disposal by nursery staff)		
Transport costs associated with other disposal costs (fuel and staff costs)		
Combined staff labour associated with on-site waste collection		
Onsite equipment costs (e.g. forklift or tractor use & maintenance costs)		
Cleaning services costs (if contractor used to clean waste bins)		
(C) Total ongoing costs of a new waste management program =		

4. Calculate any income received from the sale of recyclable materials.

The trading price of recyclable materials will vary widely by location and a local collection service should be contacted to identify the collection value of the recyclable materials. Having recyclables collected at no charge is still a good result and will help to reduce overall waste disposal costs.

Income earned by selling recyclables.	$ per unit	Units per month	Monthly ($)	Annual ($)
Green waste				
Rejected growing media				
Imperfect plants (seconds sale)				
Plastic pots and containers				
Packaging cardboard				
Steel				
Aluminium				
Greenhouse cladding and films				
Batteries				
Pallets				
Other:				
(D) Total income from the sale of recyclable materials =				

Note: multiply the '$ per unit' by the number of 'units per month' to get the monthly revenue. Multiply the monthly revenue by 12 to get a yearly revenue.

5) Identify any cost reductions due to a new waste management and disposal program

A cost reduction refers to the reduction in waste management costs due to the implementation of a new waste management program. This includes the reduction in general waste costs (calculated in step 4), a reduction in equipment use and staff labour costs, or any savings attributed to reusing materials, such as the savings achieved by not purchasing growing container due to reusing existing containers.

Cost savings due to a new waste management program	Monthly ($)	Annual ($)
Reduction in general waste collection costs		
Reduction in staff labour used for onsite waste management		
Reduction in equipment costs		
Saving achieved from reusing materials		
(E) Total savings due to new waste management practices =		

6) Calculate the net cost of the new waste management and disposal program

Copy the totals calculated in the previous steps into the table below. Add together the set-up costs (B) and operating costs (C) of the new program to get the gross costs. Then add together the revenue (D) and cost savings (E) to get the total cost reductions. Subtract the total cost savings from the gross costs to get a net cost. The net cost (F) is an estimate of an alternative waste management program.

Costs for a new waste management program	Monthly ($)	Annual ($)
(B) Total costs of setting up a new waste management program		
(C) Total ongoing costs of a new waste management program		
(B) + (C) Gross costs =		
(D) Revenue from recycling or redirecting waste		
(E) Total savings due to new waste management practices		
(D) + (E) = Total savings		
(F) Net cost of new waste management and disposal program =		

7) Calculate the difference in old and new waste management and disposal programs

To determine the difference between the old and new waste management programs, subtract the net costs of the new waste management program (F) from the net costs of the current waste management program (A). This represents the potential saving that could be achieved by implementing a new waste management program.

Change in waste management and disposal costs	Monthly ($)	Annual ($)
(A) Net cost of current waste management and disposal program		
(F) Net cost of new waste management and disposal program		
Change in waste management and disposal costs =		

Note: This costing does not account for equipment depreciation, annual disposal cost increases or a change in resource demand. These would need to be considered for future cost projections.

Ideally waste management and disposal costs should be reduced under the new waste management program incorporating reuse, recycling and diversion strategies. If costs have not reduced reassess waste disposal options, consider using a baler machine to increase the material collection value or reassess waste minimisation techniques. Refer to the document 'Steps to reduce waste management and disposal costs' for a greater discussion on the process of developing a new waste management program.