



EARTHCHECK

SAMPLE WASTE MANAGEMENT PLAN

Measuring What is Produced to Manage Where it Goes

Solid waste is a major source of pollution for the planet. Waste is generated in nearly all activities that humans undertake. To date, our solution to managing this has been to bury it under the ground in a landfill. This 'out of sight, out of mind' solution has not been very effective and has created a new set of problems that need to be dealt with. Problems with old-style landfills include the:

- Production of offensive odours
- Generation of leachate, which can contaminate nearby waterways
- Emission of greenhouse gases
- Attraction of vermin and disease.

New Zealand, for example, disposes of approximately 3.2 million tonnes of waste (around 700 kg per person) to landfills every year. These problems are largely addressed by modern landfill design. However, it is not easy to find new landfill sites that appease the whole community and meet the stringent geological and topographical criteria needed for modern landfills. Modern designs have not been around long enough to stand the test of time or natural disasters.

There is a widely recognised hierarchy for minimising waste: reduce, reuse, recycle, residual treatment, residual disposal. Managers need to quantify waste volumes, and identify sources and destinations, so effectiveness of future management strategies can be monitored. That is, you need to measure your waste in order to manage it. This same principle can be applied within organisations, communities, regions and the nation.

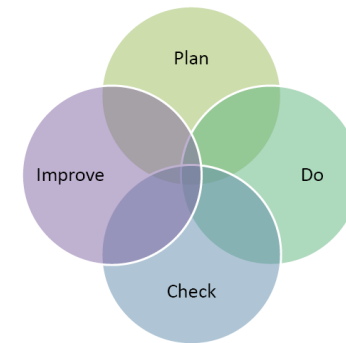
The EarthCheck Program specifically targets the reduction of waste as one of its key environmental performance areas. Under the EarthCheck Company Standard, Section 2.3.8, and organisation shall implement a waste management plan in order to minimise the production of any solid waste and ensure disposal will not have an adverse environmental impact.

“An organisation shall reuse and recycle material where possible. This includes utilising organic waste through a management program such as composting, fertiliser, mulching, animal feed and others. The most important aspect is to minimise material use is by considering the packaging of materials and where possible, utilising re-useable goods rather than disposable ones. Where this is not possible, use recyclable or biodegradable containers.”.

This EarthCheck Sample Waste Management Plan is a tool which provides guidance for the design and implementation of programs for the control of waste throughout your organisation. It has been developed for EarthCheck Coordinators and those responsible for sustainable performance. This is designed as Plan-Do-Check-Improve:

Plan – Do – Check – Improve

1. **Plan:** Identify an opportunity to improve a process or processes
2. **Do:** Implement the improvements identified
3. **Check:** Assess the results to determine how effective initiatives are
4. **Improve:** Continual improvement in annual Benchmarking Assessments



1.0 Plan (Purchasing Policy)

Under the EarthCheck Company Standard (*version 4.0*) organisations are required to ensure local and fair trade goods and services are purchased by the business, where available.

As such it is recommended that organisations commit to a Purchasing Policy for the procurement of local food, goods, other consumables and services. A purchasing policy is an effective tool to minimise waste since it allows you to determine the kinds of products and services that are delivered to your organisation and how they are packaged.

For example, organisations may commit to the following initiatives through a Waste Management Plan:

- Purchase cleaning products in concentrated forms;
- Purchase products containing recycled content;
- Give preference to purchasing products with minimal packaging;
- Purchase fresh food in reusable crates and containers that can be recycled like cardboard or paper instead of plastics;
- Engage key suppliers about their commitment to working with you to reduce waste by taking back their materials for reuse;
- Ensure that perishable products are placed in storage as soon as possible after delivery.

- Spoilage not only wastes money in terms of unused products, but also in waste disposal costs.
- Reuse or recycle empty cardboard boxes.

When planning waste management procedures and identifying waste reduction opportunities, the following should be considered across each stage of the waste management hierarchy:

- **Supply Chain Management:** How can we work with both suppliers and waste contractors to minimise waste quantities received and maximise waste reuse and recycling opportunities?
- **Standard Operating Procedures:** Do we have clear standard operating procedures which address waste issues and specify appropriate procedures for waste management?
- **Training & Education:** Do we train and educate staff and guests on standard operating and waste management practices?

2.0 Do (Reducing Waste to Landfill)

In a commitment to reduce waste sent to landfill, the key is to try not to create the waste in the first place. A large proportion of waste is generated from unnecessary packaging on goods and food products you purchase.

In documenting a Waste Management Plan, work with each department throughout the organisation to implement waste minimisation initiatives, including the identification of responsibilities and targets.

Table 1: Sample Waste Management Plan

Member Name: Vacation Hotel				
Date: December 2012				
Waste Areas	Waste Minimisations Initiatives	Resp.	Target	Due Date
Kitchens	Investigate composting opportunities and/or worm farms	Head Chef	0% Green Waste 2013	Dec 2015
	Investigate reuse of cooking oils and/or collection			
	Implement systems for recycling glass, metal and plastic containers			
	Implement a system for recycling paper and cardboard			
	Reuse large plastic drums, or send them back to suppliers for reuse			
	Investigate donating excess food to a charity organisations			
	Investigate donating excess food for animal feed			
	Other			
Conferences	Where possible utilise reusable serviettes, table clothes etc. versus paper products	Banquet Mgr	Reduce paper waste 25%	Dec 2015
	Where possible provide all silver cutlery limiting the use of disposal cutlery			
	Where possible serve drinking water in reusable jugs versus individual plastic bottles			
	Where possible purchased recycled goods e.g. pens, notepads etc.			
	Where possible provide a range of recycling bins for guests			
	Other			
Housekeeping	Set up collection systems for recycling guests items e.g. personal amenities etc.	Head Housekeeper	50% re-used amenities	Dec 2015
	Set up system and rewards program for the guest re-use of linen and towels			
	Implement recycling collection for newspapers, empty bottles, shopping bags etc.			
	Investigate refillable containers for personal amenities e.g. shampoo and conditioners			
	Where single use items are provided, donate these to charities			
	Purchase eco labelled toilet tissues/ paper and supplies where possible			
	Other			
Administration Offices	Recycle printer cartridges by returning to supplier or collection agency	Concierge	100% recycled cartridges	Dec 2015
	Purchase eco labelled office paper and supplies where possible			
	Use e-mail for distribution of meeting minutes and nightly reports			
	Implement paper recycling in offices for each staff member			
	Reuse scrap paper by binding it and cutting into note pads for use by staff			
	Reuse copy paper boxes for file storage.			
	Other			

Front Office	Business centre – office paper, newspapers, magazines (set up recycling systems)	Front Office Mgr	100% recycled office paper	Dec 2015
	Lobby area – newspapers, magazines, old flowers (papers on request)			
	Other			
Day Spa	Spa/ Fitness centre – paper cups, office paper, magazines (set up recycling systems)	Leisure Mgr	100% recycled office paper	Dec 2015
	Set up system and rewards program for the guest re-use of towels			
	Other			
Maintenance	Garden – cuttings, grass clippings (composting/green waste collection)	Maintenance Mgr	100% composting green waste	Dec 2015
	Workshop – recycle construction materials where possible			
	Chemical Storage – supplier to collect or empty drums			
	Car park – newspapers, drink containers (recycle bins)			
	Other			

Communication:

How will the organisation communicate the above waste management plan to all key stakeholders, both internal and external?

Signed:

Name:

Date:

3.0 Check (Waste Audit)

A Waste Audit is simply an assessment of waste that is generated. It is a valuable tool as it tells you:

- How much waste there is in total
- What the waste actually consists of and the quantities of each type of material
- Where the waste was generated
- Where it ends up (e.g. landfill, composting plants)

Using this information it is possible to target activities and suppliers producing the most waste going to landfill. It helps to identify where reducing waste at the source is going to be most practicable and effective. Waste audits also identify environmentally viable alternatives to landfill for the waste that cannot be eliminated and you can look at alternative methods of disposal such as reuse, recycling or composting.

Management support is essential for ensuring the smooth completion of the audit, and means that any findings or recommendations are more likely to be considered and implemented. You will need to justify the time and resources needed to do the audit.

Calculating the Weight of Your Waste

Waste skip collected by a contractor

If your local refuse transfer station has a weighbridge, then the contractor collecting your waste should have records of the weight of every skip they collect from you. Contact your waste contractor and ask them to supply you with the weights of your skips for the last 12 months. Your waste collector may have the data available directly in the form of volume of waste collected. Ensure this is the actual volume of waste and not the volume of the bin or skip used to collect the waste. If you are in an office block or share a skip with other businesses, then you will need to find out what proportion of the skip is yours. There are a number of ways to do this is.

Talk to your property manager and find out who the waste contractor is for the skip you share. Explain to them what you are doing and that you need to find out the quantity of waste from your business. Hire an extra skip for the week being sampled and ask the contractor to supply you with the actual volume (or weight) of the rubbish inside the skip (Table 2.1). Repeat this as many times as practical throughout the year (we suggest a minimum of four) and average the weekly figure. Multiply the average figure by 52 weeks to get an estimate of your total weight for the year.

For example:

Date	Period of Waste	Weight of rubbish (kg)
11/03/2015	7 days	654
10/06/2015	7 days	412
09/09/2015	7 days	711
09/12/2015	7 days	1017

The average for the 7 days is the total of the 4 weeks divided by four:

$$654 + 412 + 711 + 1017 = 2794 \text{ kg}$$

$$\text{Average for 7 days: } 2794/4 = 698.5 \text{ kg}$$

$$\text{Total estimated weight of waste for the year: } 698.5 \text{ kg (7-day average)} \times 52 \text{ (weeks in year)} = 36,322 \text{ kg or } 36.3 \text{ tonnes}$$

NOTE: 1000 kg is equal to one tonne.

If the waste contractor cannot supply you with the amount of your waste, then collect your waste separately for the weeks that you sample. This may involve hiring some wheelie bins or collecting the waste in rubbish bags. You will need to measure the volume of (or weigh) waste at the end of the week and estimate the total waste for the year using the method described above.

Wheelie bin or drum collected by a contractor

When a contractor empties your bin or drum it is mixed into a skip or other container on the truck with rubbish from other businesses. This means the contractor is unable to supply you with the amount of your waste. You will need to measure the amount in the bin or drum just before it is due to be emptied. Once you have your weekly figures estimate the yearly figure as **shown in (1) above**.

Council rubbish bags collected at the gate

Most councils offer a weekly black rubbish bag collection for businesses close to the township or city. Just before your weekly collection is due measure the amount in all of the bags to be collected. Repeat this throughout the year and calculate your estimated yearly total as shown above. If you are a small company and can purchase or borrow someone's bathroom scales, it may be practical to weigh your waste each week and obtain an accurate figure for the year.

Drop off your own rubbish to the transfer station or landfill

If the landfill or transfer station has a weighbridge, then the docket you receive upon payment will display the weight of the waste. This is shown as the tare weight and you will need to keep this docket or record it on a sheet. After 12 months you will be able to add up all of the figures and have a total weight for the year.

If the transfer station does not have a weighbridge, you are charged by the type of vehicle you use (e.g. single axle trailer, car). You will therefore need to hire scales and weigh the waste at your premises. Weigh the week's waste and estimate the total waste for the year as shown above.

If you conduct tours or business away from your premises

Your business may operate biking, bushwalking/tramping, boating or other trips away from your main premises. This may mean that your rubbish is disposed of at different points along the tour. You will need to keep all of your waste from one tour and bring it back to a central location for weighing. Repeat this exercise during the year, say in December, March, June and September, to get an average figure for each tour and divide this by the number of people on each tour. Multiply this number by the total number of tours you take each year. However, if the number of people on each tour varies greatly, you may like to calculate the weight of waste generated per person for each tour, find the average over the four tours sampled and multiply this number by the total number of people taken on tours for the year. This will give you an estimate of the weight of waste for the year. If your tours are of varying length, you will need to factor this in as well. For example:

A cycling tour company has taken 150 people on trips lasting between 5 and 12 days for the last year. The total number of tour days for the year was 120. Waste from four trips was collected, weighed, and used to calculate the total weight of waste for the year.

For example:

Date	Weight of Waste (kg)	Length of Tour (days)	No. of people on tour	Kg / person / day
11/03/2015	48	5	8	1.2
10/06/2015	71	12	14	0.4
09/09/2015	47	5	10	0.9
09/12/2015	45	5	8	1.1

The average waste generated per person per day is:

$$= 1.2 + 0.4 + 0.9 + 1.1 \text{ kg} / 4 \text{ tours sampled}$$

$$= 0.9 \text{ kg/person/day.}$$

To estimate the total for the year:

$$= 0.9 \text{ kg/person/day} \times 150 \text{ people} \times 120 \text{ days}$$

$$= 16.200 \text{ kg or } 16.2 \text{ tonnes per year.}$$

4.0 Improve (Annual Benchmarking Assessment)

Continual improvement can be measured by way of annual Benchmarking Assessments;

Under the EarthCheck Program, organisations are required to collect and submit Benchmarking data against each of the Core Benchmarking Indicators, including *Waste Sent to Landfill* by way of annual Benchmarking Assessments.

It is a requirement that the volume of waste landfilled can be measured in cubic metres per annum (or alternatively weight of waste landfilled (kilograms or tonnes) per annum) / Activity measure (for example, guest nights per annum). If you compact your waste before disposal then the volume to measure for the purpose of this indicator is the compacted volume of the waste material.

If you need to estimate your waste based on sampling it is important to do this at different times of the year and use an average. It is not effective to calculate your volume of waste from one week in June and multiply this to give a yearly figure, especially if June happens to be your quietest month. A more effective approach would be to sample a week in December, March, June, and September, average all four figures, and multiply the average to obtain a yearly figure (most contractors collect weekly but if your collection is different, just substitute this).

From the results of the Benchmarking Performance Report, the organisations targets and objectives can be quantified over the years.



For further information please contact the EarthCheck Team relationshipmgmt@earthcheck.org

Annex 1: Waste Minimisation

How can I reduce my waste production?

It is essential to address both physical and behavioural changes which can be made within your operation.

Conduct a Waste Audit

If you have not already carried out a waste audit, it is a valuable exercise to do. A waste audit will help you identify the types of materials you throw out, what areas within your business are generating waste, and in what volumes. Once you know the material types and volumes that make up your waste, then you will be able to assess which alternative waste management options are available to you – for example, reducing the waste at the source, recycling, and composting. A waste audit can help to achieve the environmental improvement outcomes sought. It is important that you document the results of the waste audit and what actions you have taken to improve your disposal system and reduce the waste that your business sends to landfill.

A waste audit manual has been prepared by the Zero Waste New Zealand charitable trust and is available from them. For other helpful ideas, resources, and an update on what is happening in New Zealand and internationally visit their web site at: www.zerowaste.co.nz

Reducing Waste to Landfill

The key is to try not to create the waste in the first place. A large proportion of waste is generated from unnecessary packaging on goods and food products you purchase. It is worth communicating with your suppliers and letting them know that you desire to reduce your waste, so they can inform you of the products they offer with less packaging or packaging that can be reused or recycled. For example, buy your cleaning chemicals in bulk or in containers that you can take back and refill. Make sure fruit and vegetables are delivered loosely in crates without packaging. Recycle wherever possible and have highly visible bins available for your clients to use as well. Make sure it is obvious to staff and clients what can and can't be recycled. Remember that the majority of waste going to landfill doesn't actually need to go there. In New Zealand and Australia nearly all paper products can be recycled, as well as glass, steel, aluminium and many plastics. Garden waste can be composted and kitchen waste can be worm-composted.

Reducing the waste you send to landfill is not only good for the environment but saves you money too.

Rethink

- Adopt an environmental purchasing policy
- Consider whether single-serve packages and disposable goods are necessary
- Carry out a waste audit of your central waste bin and identify the materials that can be avoided, reused or recycled
- Purchase goods made of recycled materials in preference to virgin materials
- Adjust order quantities to prevent wastage

Reduce

- Avoid over-packaged goods (e.g. newspapers wrapped in plastic)
- Purchase goods in bulk, preferably in refillable or returnable containers
- Avoid single-serving products (e.g. sugars, butters, condiments, cereals, biscuits, sweets, milks, coffee etc)
- Avoid disposable items (e.g. plastic drinking cups, doilies, coasters, shavers)
- Store food in reusable containers to reduce the use of plastic film
- Photocopy on both sides of paper
- Use reusable envelopes for internal mail
- Use electronic mail to send information
- Store information in electronic form rather than on paper
- Encourage suppliers to pack goods in returnable reusable plastic crates

Reuse

- Damaged towels and sheets as cleaning rags and cloths
- Scrap paper as notepads
- Coat hangers from the laundry
- Chose rechargeable batteries
- Reuse fabric serviettes rather than continually disposing of paper serviettes

Recycle

- Office paper, Cardboard, Newspapers, Magazines
- Glass bottles, Jars, Plastic milk and soft drink bottles, Aluminium cans
- Motor oil
- Cooking oil
- Car batteries
- Used phone books
- Toner and printer cartridges

We also recommend you contact your local council staff for information on what they offer in terms of recycling, reuse, and composting.

Sending waste to landfill should always be a last resort, only after having fully explored the four R's

