

Facts

Do you work in a waste-efficient office?
Read on and find out how to save your organisation money and help the environment by conducting a waste audit.



Doing a waste audit

Introduction

What is a waste audit and why do one?

A waste audit is a formal, structured process used to quantify the amount and types of waste being generated by an organisation. Information from audits will help identify current waste practices and how they can be improved. Being waste-wise can mean:

- a more efficient and effective organisation
- reduced waste management costs
- better use of limited natural resources.

Agencies also need to undertake waste audits to report performance in implementing their WRAPP plans.

Isn't picking through waste disgusting?

It's not as bad as you think. Waste audits are carefully planned and the safety of people conducting the audit is paramount. Sorting is done in ventilated areas and is carefully controlled. Sorters undertake safety training and use protective equipment such as tongs, gloves, masks and overalls. Waste is *never* handled with bare hands.

Types of waste audit

Audits can be done on any type of waste e.g. paper and office waste, municipal waste, commercial and industrial waste, construction and demolition waste etc. There are a number of different ways to conduct a waste audit, such as visual waste audits, waste characterisation, desktop audits and others. The type of audit you use depends on the type of waste, where it is and what you want to get out of the audit.

The NSW Environment Protection Authority has developed a variety of audit methodologies for different wastes that have been used by many government and private organisations throughout New South Wales. Contact the EPA for more information on using them.

How do you do an audit?

NSW Government agencies are encouraged to contact the EPA for more information on waste auditing. Audits can be done either in-house (using agency staff), contracted out or a combination of both. Before launching into an audit a number of issues need to be considered:

- **What are the objectives of the audit?**
The audit's objectives will largely determine the waste types and physical locations to be audited. Some examples of audit objectives could be:
 - to determine composition and quantities of waste being generated
 - to measure effectiveness of existing waste management systems
 - to identify opportunities for improving waste management systems and strategies
 - to collect baseline data for measuring the effectiveness of waste minimisation strategies.
- **Do you have management approval and support?**
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.
- **Do you have people to help?**
Unless you have a tiny office you will need others to help sort the waste. Some estimates of how long it takes to do a waste audit are provided in Table 1.



Steps to doing a waste audit

Auditing waste is often simpler than it appears. The four basic steps to doing an audit are:

- Plan the audit
- Collect the waste
- Sort the waste
- Analyse the data

● Table 1: Time and resource estimates for different organisations

Type of office/building	Number of staff	Number of days waste is collected	Number of trained sorters	Time to do sorting
Small regional office, single story	<20	5	2	1 – 5 hours
Medium sized agency with three stories	<100	5	6 – 8	1 – 2 days
Large agency, multi-story building	450 – 500	5	2 – 5	3 – 5 days

You may need to train others to audit their respective offices. Alternatively, temporary staff or professional auditing contractors can be used.

- **Have all safety issues been considered?**

Training, safety equipment and tetanus shots must be organised to ensure sorters are safe from potential hazards associated with handling waste. You will need to involve the agency's occupational health and safety officer(s). The EPA can provide more information on safety issues.

- **Are policies in place to protect confidentiality?**

The confidentiality and privacy of documents or personal information found in the waste stream must be assured. No documents can be read or removed from the sorting area. If waste is to be transported to another location to be sorted then it must be stored and disposed of securely.

- **Has the date of the audit been kept secret?**

Staff must *not* know when the audit is happening, otherwise they may change their waste behaviours and audit results will not represent normal waste practices.

- **Do you have the necessary equipment?**

Equipment to do the audit is very basic. Equipment and other needs to do an audit are listed in the box opposite. Accurate scales to weigh the waste are essential. These can be borrowed from the EPA to do your audit.

- **Who is going to report results?**

Analysing the data is also simple. There are computer programs available from the EPA to do most of this for you.

Addressing these issues will help the audit to run smoothly, and will protect the safety of staff and ensure that results provide an accurate picture of reality. A robust, well run audit will enable management to make positive recommendations that will reduce the amount of waste generated by your agency.

Safety of staff

Ensuring the safety of the sorters is critical. Involve your occupational health and safety representatives from the earliest planning stage.

Basic equipment for audits

- Secure, well ventilated work area sheltered from sun, wind and rain
- Two to four large tables
- Plastic sheeting to cover tables
- Ten buckets of different sizes
- Barbecue tongs and rakes to sort waste
- Accurate scales
- Data sheets
- Broom and disinfectant
- Lots of garbage bags
- Safety equipment and first aid kit
- Plenty of water

Steps to do an audit

Auditing waste is a relatively simple process but can be fiddly. The four basic steps to doing an audit are summarised here, and more detail provided in Table 2.

1. PLAN the audit carefully and define the study area

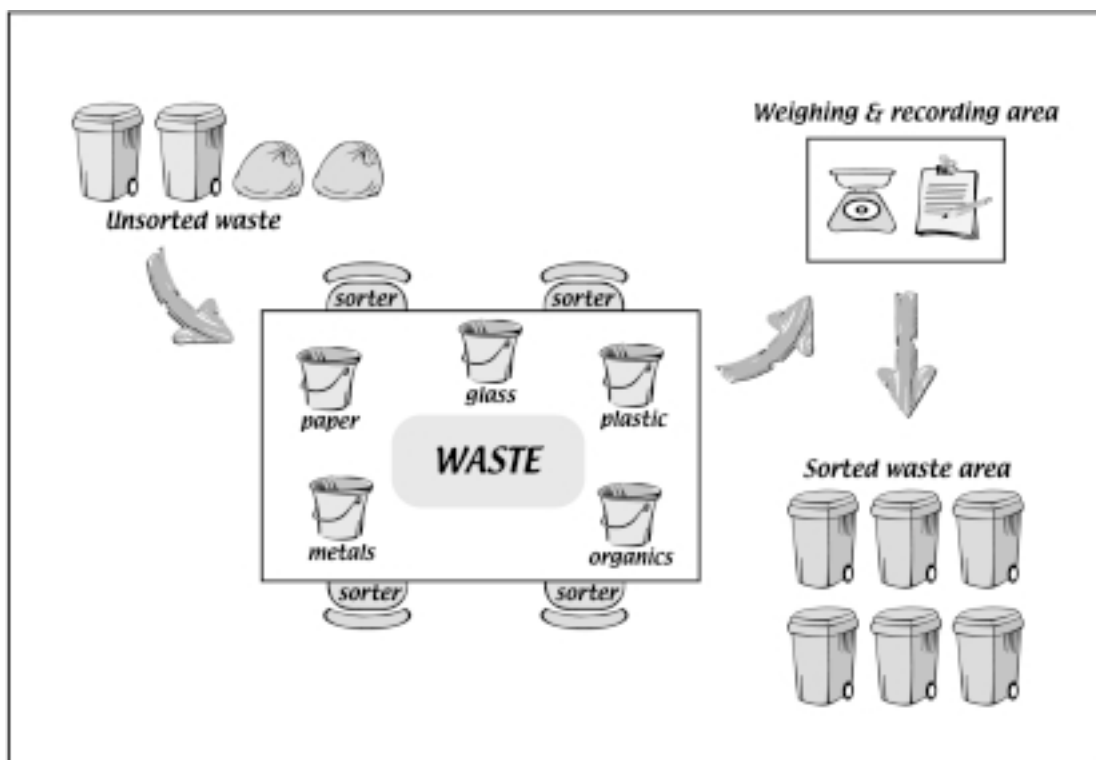
Good planning is essential to ensuring the audit goes smoothly. You will need to get management support, define the objectives of the audit, organise people and deal with other issues raised as a result of the audit. This may take some time but the more effort you put in up front will pay dividends when the audit is under way.

2. COLLECT the waste from the study area

Cleaners or waste contractors can collect the waste for you. You will need to talk to building managers and cleaning supervisors to get their support. Cleaners must have clear instructions about the types of waste they are to collect and how to label the bags to identify the source of the waste (that is, where it came from, e.g. 'Level 1 kitchen', 'Level 2 offices' etc). A trial run before the start of the official collection period is a good idea. This way you can step cleaners through the collection process and iron out any problems.

3. SORT the waste into different categories and record the data

Sorting the waste is the interesting part. A basic layout for a sorting area is illustrated below. After the location from which the bag of waste comes is recorded, the bag is weighed and emptied onto the table and sorted into material categories (e.g. glass, office plastics, metal etc). Each category is then individually weighed and recorded. The table is cleaned and the sorted waste disposed of, and the process is repeated for the next bag and so on.



4. ANALYSE the data and write up the results

Once all the waste is sorted you will have a large number of data sheets showing the quantity of waste by material categories that was generated within each area sampled. This data is then entered into a database and analysed. Once analysed the results can be written up and recommendations made.

More detailed information on each of the steps is available from the EPA.

● Table 2. Waste Auditing: the four parts

	<i>Step</i>	<i>Actions</i>
PLAN	1. Define the study area	Set audit objectives Determine location(s) to be audited Determine types and approximate quantities of waste to be audited
	2. Collect background information	Visit location(s) and record: <ul style="list-style-type: none"> ▪ number of employees in study area ▪ number, types and locations of bins ▪ types of waste seen ▪ who empties bins and when
	3. Prepare for the audit	Collect auditing equipment Brief/train cleaners and sorters Finalise waste collection details Double-check locations of bins
COLLECT	1. Collect the waste	Collect all waste daily Label bags showing location and day Record relevant collection details
	2. Transport the waste to the sorting area	Store waste on-site if possible Otherwise transport to secure location using a licensed transporter
SORT	1. Prepare the sorting area	Cover tables with plastic Set up tables and scales Collect buckets, bins, brooms, etc Have water and first aid kit on hand
	2. Sort the waste	Weigh each bag Carefully open bag and spread waste on table Sort into different material categories Count and weigh individual materials Record findings on data sheet Dispose of sorted waste Repeat for all bags
	3. Final clean up and decontamination	Dispose of sorted waste Clean off tables Clean buckets and other equipment Sweep and disinfect floor Shower and change clothes
ANALYSE	1. Enter and analyse the data	Enter data sheets onto spreadsheet Do calculations
	2. Prepare an audit report	Prepare audit report, including findings and recommendations

Help is available

Visit the WRAPP website at
www.wrapp.nsw.gov.au

email wrapp@epa.nsw.gov.au
or phone NSW Environment Protection
Authority on 131 555 or (02) 9995 5000.