

# **NO WASTE BY 2010**

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## **Introduction**

In December 1996 the ACT (Australian Capital Territory) Government released the “No Waste By 2010 - Waste Management Strategy for Canberra”. As the name implies the goal of the Strategy is to achieve a waste free society by 2010. This was the first time that a Government anywhere has set such a challenging goal for waste management.

The No Waste Strategy was developed using an extensive community consultation process and reflects the views and expectations expressed by the community during the consultation period. The Strategy has broad community support and aims to build on the willingness of the community to recycle and improve environmental outcomes by treating unwanted materials as resources rather than wastes.

The year 2010 was selected as being a suitable timeframe to make the significant changes needed to achieve a waste free society but not too far off that taking action could be delayed.

Implementation of the Strategy is being progressed in stages or steps. The original strategy identified priority actions that needed to be progressed in the first few years. These included developing an inventory of wastes, establishing recovery infrastructure, educating the community and implementing appropriate charges to provide incentives to reduce waste disposal.

In 2000 the ACT Government released the Next Step in the No Waste Strategy. This identified activities to be progressed over the next 3 year period. It is proposed to develop a further 2 programs for the period between 2003 to 2010 and these will articulate initiatives to be undertaken to assist with reaching the No Waste goal.

It is now almost five years since the release of the Strategy. In that period significant progress has been made to increase resource recovery and reduce waste disposal with a 61% resource recovery level achieved in 2000/01.

Establishing the No Waste By 2010 Strategy has initiated world wide interest. No Waste (or Zero Waste) organisations are being established in many areas and progressively move governments are setting similar goals.

There are clearly many challenges ahead before we achieve No/Zero Waste but the technologies exist now and with appropriate commitments and involvement of all sectors of the community it is achievable.

## **Discussion**

### **Developing the Strategy**

Between 1992 and 1995 several attempts were made to complete a waste management strategy. However, changes were implemented at a rate that made it difficult to produce a relevant and visionary strategy. In 1995 the then Minister gave a commitment to the local

community to produce a waste management strategy using a comprehensive community consultation process.

The process involved the following five basic steps:

1. Preparation and circulation of an issues paper
2. Workshops with community and industry representatives to identify and prioritise issues
3. Preparation and circulation of a draft strategy
4. Full consultation on the draft strategy
5. Preparation and release of a final strategy.

During the workshops the No Waste proposal was developed and this was included in the draft strategy and tested on the broader community during the consultation period. Community views expressed were generally very supportive of the No Waste proposal.

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The Strategy outlines the vision for waste management in Canberra, provides details on waste management practices - past to present, expands on the consultative process used and lists broad actions requiring attention in order to achieve the goal. The actions are listed and developed under the headings of Community Commitment, Avoidance and Reduction, Resource Recovery, Residual Waste Management and Creative Solutions.

In 1997 an inventory of wastes was prepared. The inventory was prepared following a series of waste audits that assessed the volumes and composition of the wastes being generated and disposed of from domestic, commercial/industrial, and building/demolition sectors. This information has been vital for strategic planning, to set targets and to determine infrastructure requirements. The results of the inventory were used to identify baselines of waste generation levels, to set benchmarks and progressive targets for waste reduction between now and 2010.

### **Initiatives that have been progressed to date**

ACT NOWaste has facilitated the establishment or contracted a broad range of services for the collection and/or reprocessing of a wide range of materials. This includes:

#### **▪ Kerbside recycling**

Individual dwellings are supplied with a divided 240 litre recycling bin. The front section of the bins is for paper and light cardboard and the back section for containers including glass, cans, plastics and cartons. The recycling bins are collected fortnightly. In multi units separate bins are provided for the paper and containers. These are for shared use by residents and are either 240 litre or 1100 litre hoppers depending on the number of dwellings in the development

#### **▪ Garden waste**

Canberra was planned as a garden city and as a consequence produces large quantities of garden waste. Garden waste is not accepted in the residual waste collection service. There are two businesses operating in Canberra that accept and reprocess garden waste under contract to the ACT Government. Corkhill Bros operate one site at the Mugga Lane landfill and Canberra Sand and Gravel operate two sites one at the West Belconnen landfill and one in Mitchell. They both accept garden material up to the size 200mm in diameter by 2m in length. Material can be dropped off at these site free of charges and this

has resulted in some 110,000 tonnes per annum being delivered to these sites. The garden waste is shredded, windrowed and regularly turned. Moisture and temperature are continually monitored and they add other materials such as sawdust waste, manure from feedlots etc to improve the C:N ratio and produce high quality products. Finished compost is screened and then sold as a range of products including composted mulches, soil mixes, potting mixes and compost. These products comply with Australian Standards and the firms have developed markets for all the material processed. Most tree pruning companies and the urban parks service have mobile shredders that chip up smaller prunings during arboricultural maintenance and this is used on garden beds as a mulch.

▪ **Construction and Demolition**

A number of businesses have been established in Canberra to reprocess construction and demolition waste. Approximately 157000 tonnes of materials is reprocessed each year from the construction and demolition industry. Canberra Concrete Recyclers are the largest demolition waste recycler. They have a major crushing and screening plant located on an old landfill. Other businesses have mobile crushers that are transported to sites where demolition waste has been stockpiled and crush and screen the material into various sized aggregates. Products produced are being used in a range of civil works projects and landscaping applications for bedding, drainage and decorative applications. As part of value adding bricks are kept separate with many cleaned for reuse or crushed to produce a reddish replacement for scoria.

Demolition processes have changed significantly over the past 5 years. In most cases salvage operators recover fittings, windows, doors, construction timbers, roof tiles and other reusable items prior to the major demolition process. These are then sold through a network of second hand building supply sources. Masonry is then kept separate and sent off for reprocessing.

A Development Control Code has been established that requires Waste Management Plans to be prepared and approved prior to approval being granted for demolitions and for commercial buildings. These plans have to identify how the wastes will be managed through the construction and demolition phases.

▪ **Landfill salvage**

Assistance has been provided to a not for personal profit company called Revolve to set up and operate salvage and reuse sales sites at Canberra's two landfills. Residents are encouraged to deliver reusable items directly to Revolve. Revolve sells these items and revenue generated pays the salaries of those employed in the business. Revolve employees approximately 17 full time staff and recover about 6000 tonnes of materials from landfill each year.

▪ **Paper and cardboard**

Services have been established to recover paper from the majority of offices and cardboard from offices and commercial businesses. Recycling centres have been established in each district of Canberra for the recovery of paper, cardboard and containers.

- **Motor Oil**

Three operators provide collection services from garages and workshops and there are large storage tanks and community acceptance areas at both landfills where residents can drop off their oil for free.

- **Other Recovery Services**

Services are available for a wide range of other materials including:

Car bodies white goods

Clothing and footwear

Cooking oil

Batteries – car and rechargable

Oil and water based paint

Due to limited space these are not detailed in this paper but information on these services is available from our website at [www.act.gov.au/nowaste](http://www.act.gov.au/nowaste)

## **The Next Step and Current Initiatives**

The Next Step in the No Waste Strategy was released in March 2000 and this sets out the programs to be implemented and the targets to achieved over the three year period from 2000 to 2002. The Next Step proposed to target the large volume materials in the domestic, commercial/industrial and building/demolition waste streams. Some of the initiatives are outlined below:

- **Determining Future Collections and reprocessing**

Processes are underway to identify the next generation of collection and reprocessing services for domestic collected materials. As part of this process Expressions of Interest have been called for creative collection and reprocessing technologies, a review has been conducted of services provided by councils around Australia and an organic collection trial was conducted.

Organic collections (bio bins) were trialed in the suburb of Chifley with over 1000 households involved, including 200 multi-unit dwellings. All single dwellings were provided with an 85 litre bio bin and a kitchen bio bin, the multi-units were provided with 240 litre bio bins for shared use. The bio bins were designed to collect all household organics including food scraps, meat, dairy products, tissues, paper towel animal feces and small amounts of garden waste. The trial ran for a 11 month period. During the trial residual waste bins were collected fortnightly, bio bins week and recyclables remained on the fortnightly collection. The results from the trial are currently being assessed and this information will assist in determining Canberra's future domestic collection services.

- **Second hand Sunday**

Each year a progress report is provided to the community and residents are asked to provide comments and suggestions about how services could be improved. One respondent suggested that a day be organised where the community can place out items that they no longer need for others to collect. ACT NOWaste trialed this idea (Second-hand Sunday) firstly in one suburb, then a district and now this service is operated Canberra wide twice yearly in March and September. Residents are being encouraged to either place unwanted items out for others to collect or look for items that they may be able to re-use.

- **New Resource Management Centres**

One of Canberra's landfills is being closed and will be replaced by a centrally located Resource Management Centre. This Centre will include a major reuse and salvage operation to be located in a warehouse in which reusable items can be collected, stored and sold for reuse. The centre will have a wide range of drop off facilities and a large area where building wastes can be collected and separated for recycling. Even the waste drop off area is designed so that materials can be readily recovered. The contract also requires that similar facilities be constructed at the other landfill and will include a major upgrade of the Revolve Centre. The contract is structured in such a way that the contractor can be paid incentive fees for the materials recovered.

The old landfill will be used to extend a Resource Recovery Estate where businesses are provided land at cheap rental to set up and operate recovery and recycling services.

- **Market development and new technologies**

Developing markets is essential to sustaining recycling services and ACT NOWaste puts a major effort in assisting local operators to identify and capitalise on market opportunities. This has resulted in many cases with markets that exceed supply. We are active participants in the Australasian Market Development Network and encourage information exchange in this area between key stakeholders. Our staff also facilitated the establishment of a Resource Recovery Industry Division under the Australian Waste Management Association to provide a mechanism for operators to collaborate and exchange information. Assistance is also provided to establish innovative reprocessing services. For example a current project involving two companies Primergy and BEST, with support from the Australian Greenhouse Office will be establishing a plant that turns green waste and timber waste into clean burning briquettes for wood fires. The other outputs from the plant will be green electricity (via pyrolysis) and charcoal. This plant is expected to be up and running by early 2002 and involves an investment of approximately A\$5.8 million.

- **Waste Legislation**

Most of our success to date has been achieved through facilitation, cooperation and voluntary approaches with disposal charges providing some incentive. It is recognised that regulation will be increasingly necessary, particularly when voluntary approaches fail to deliver appropriate outcomes. In June 2001 the Waste Minimisation Act was established to provide a framework for regulations and to support initiatives.

- **Pricing Strategy**

Implementing landfill charges that reflect the true costs of waste disposal and provide an incentive to recycle are necessary to achieve the No Waste goal. A study was conducted and determined that the true costs of waste disposal (including environmental and social costs) are about A\$110 where as current charges are A\$33. Government agreement is being sought to a Waste Pricing Strategy that will move charges toward covering the true costs and to provide a revenue source to fund alternatives to disposal.

## **Future Initiatives**

### **▪ Beyond The Next Step**

The Next Step programs will be reviewed in 2002 and this will assist in developing the following step for the periods 2003-2006 with a series of new programs that will be targeted to priorities identified during the review. In 2006 a further review will be conducted and a final program developed for implementation during the period 2007-2010. This final program is to be based around achieving No Waste By 2010.

It is expected that over time the volumes of waste requiring disposal will continue to reduce and that these residual waste will become increasingly more difficult to deal with. It is therefore envisaged that the focus will change from voluntary towards regulated approaches including extended producer responsibility and possible regulation of what is accepted for disposal. Landfill charges are also expected to increase significantly over time to discourage disposal and make recycling alternative more viable.

### **▪ New infrastructure**

Finding solutions for problem materials will be one of the major challenges of achieving No Waste. It will also be necessary to identify and establish reprocessing technologies that can reprocess the residual wastes and rationalise collections to suit the selected reprocessing technologies.

## **Education Programs**

Public education is integral to any integrated approach to waste management and in achieving our No Waste goal. Much of our success in waste reduction and recycling to date has been achieved through providing the community with appropriate information on available services, how to effectively use the services and ways in which waste can be reduced. Domestic garbage and recycling contracts include a requirement for the contractors to spend a specified amount each year on community education/promotion programs. Each year ACT NOWaste takes part in a number of promotional events such as World Environment Day, The Australian Science Festival and National Recycling Weeks, Green Living Fairs etc. ACT NOWaste runs a community education program Earthworks that teaches people how to live with less waste in their day to day lives. The No Waste website at [www.act.gov.au/nowaste](http://www.act.gov.au/nowaste) also plays a big part in providing the community with up to date information on available services and new programs or trials that are taking place.

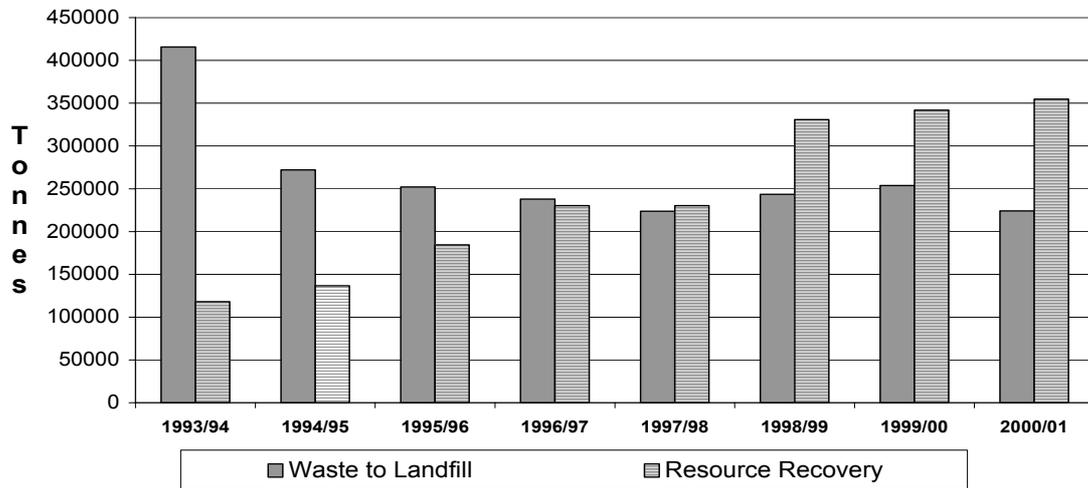
Each year an annual progress report is send out to the community informing them of the progress made for the previous year. People are also encouraged to provide us with feedback or ideas that they have to reduce waste and where possible these are implemented – for example Second-hand Sunday.

## **Results**

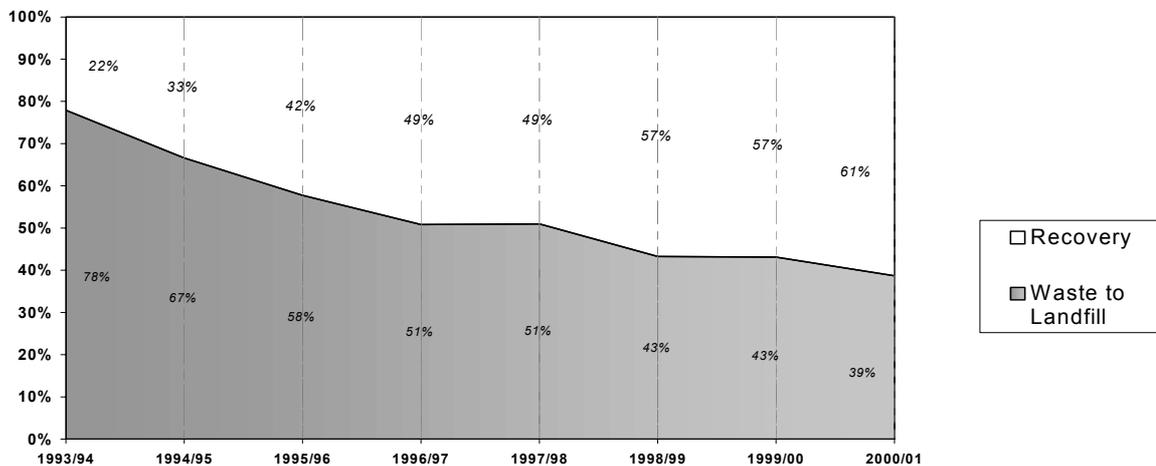
Significant progress has been made to reduce waste to landfill and increase resource recovery levels in the ACT. This turn around from disposal to recovery has been achieved by establishing programs with associated infrastructure for a wide range of waste materials, with an emphasis placed on major volume materials.

The trend has been to progressively increase resource recovery while reducing waste to landfill. Table 1 details waste to landfill and resource recovery results. In 2000-01 224,225 tonnes were disposed of and 354,779 tonnes were recovery/recycled. Table 2 gives recovery and disposal as percentages of total waste generated and identify that a 61% recovery result was achieved.

**Table 1: Waste to Landfill and Resource Recovery Results**



**Table 2: Resource Recovery and Waste to Landfill as a Percentage of the Total Waste Stream**



## Conclusion

No Waste by 2010 is a visionary strategy for sustainable waste management with strong community support. The ultimate challenge is to empower the community so that they stop treating materials as waste but rather as resources with value. The role of the waste managers will be to create an environment in which this change can take place and to facilitate the establishment of systems and services that allow this to occur.

Achieving no waste will require a commitment by the community to fund the necessary services and infrastructure and collaboration of government, business and residents to fully utilise these services.

No waste offers to deliver significant environmental benefits by avoiding landfill and through the recovery of resources of reuse. It creates significant new business, investment and employment opportunities. In addition, there are major social benefits from empowering a community to actively participate in doing positive things to help the environment. This is an example of achieving the triple bottom line.

Achieving no waste will be challenging and needs the full support from all sectors of the community, new technologies, a changed vision from waste to resources and regulations that support the concept. Despite the challenges ahead the ACT is committed to making it happen.

## **References**

December 1996 - ACT Government – No Waste By 2010 - A Waste Management Strategy For Canberra

March 2000 – ACT Government – The Next Step in the No Waste Strategy

ACT NOWaste website – [www.act.gov.au/nowaste](http://www.act.gov.au/nowaste)