

**LEGISLATIVE ASSEMBLY FOR THE AUSTRALIAN CAPITAL TERRITORY**

**INQUIRY INTO COMMERCIAL AND  
DOMESTIC WASTE MANAGEMENT**

**REPORT OF THE STANDING COMMITTEE ON CONSERVATION,  
HERITAGE AND ENVIRONMENT**

**MARCH 1990**

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## **ESTABLISHMENT OF THE COMMITTEE AND INQUIRY**

On 25 May 1989, the Standing Committee on Conservation, Heritage and Environment of the Assembly was established.

Pursuant to proceedings of the Legislative Assembly on 29 June 1989, the Committee was referred to inquire into and report on –

- (a) the management of commercial and domestic waste (not including industrial and clinical waste disposal); and
- (b) appropriate solid waste management practices, with particular reference to
  - (i) options for efficient collection of domestic waste;
  - (ii) options for stimulating recycling of domestic wastes, including glass, paper, plastics and metals and the impact of collection systems on recycling performance;
  - (iii) options for improving commercial waste disposal in particular, the economic recycling of resources; and
  - (iv) measures that the ACT Government could introduce to encourage recycling.

The initial members of the Committee were:

|                 |                   |
|-----------------|-------------------|
| Chairman        | Mr Gary Humphries |
| Deputy Chairman | Ms Carmel Maher   |
| Members         | Mr Michael Moore  |
|                 | Mr Bill Wood      |

By resolution of the Legislative Assembly of 16 November 1989, Mr Bernard Collaery was appointed as a member of the Committee.

By resolution of the Legislative Assembly of 14 December 1989, and by resolution of the Committee of 18 December 1989, the members of the Committee are:

|                 |                   |
|-----------------|-------------------|
| Chairman        | Dr Hector Kinloch |
| Deputy Chairman | Mr Bill Stefaniak |
| Member          | Mr Bill Wood      |

|                        |                 |
|------------------------|-----------------|
| Secretary to Committee | Ms Peta Roberts |
|------------------------|-----------------|

## **PREFACE**

In this report, the Standing Committee on Conservation, Heritage and Environment has addressed one of the most complex issues facing an increasingly environment conscious population – that of how to manage our wastes.

Every year in the ACT, each person generates an average of 400kg of domestic waste. Surprisingly this figure represents only one-third of all wastes generated for landfill disposal in the ACT. The other two-thirds is generated by commercial and industrial activities.

The implication of so much waste being generated is the need to provide adequate facilities for its disposal, both now and in years to come.

In compiling this report the committee was very conscious of the need to provide for the long term disposal of wastes. It is the committee's hope that this report provides the blueprint for a strategy which will put the ACT at the forefront of responsible waste management in Australia.

The Committee believes that the community is so acutely aware of its effect on the surrounding environment, that it is timely that it be given a better opportunity to participate in implementing a comprehensive waste management policy. It is the committee's view that this strategy will be more considerate of the community's abilities to care for its environment.

The Committee would like to acknowledge the assistance given to previous members of the Committee by those councils, authorities and other organisations and individuals in the ACT, New South Wales and Victoria. The Committee also appreciates the many detailed submissions it received and thanks all those who attended as witnesses.

I join with Gary Humphries, the inaugural Chairman of this Committee, in thanking Peta Roberts for her thoughtful and thorough work as Secretary to the Committee. Her work was complicated by the various changes of membership and chairmanship. She coped with this splendidly, as in all other matters.

Hector Kinloch

Chairman



## **SUMMARY**

### **Introduction**

This report outlines the various aspects of commercial and domestic waste management and recommends policies and decisions which form the overall strategy of a comprehensive waste management policy. Recommendations on one aspect of waste management must be considered in terms of its relationship with all other recommendations.

The issues involved with the disposal, collection and recycling of wastes are very complex. Accordingly the Committee wishes to outline at the beginning of this report the strategy it has developed which it is confident will provide the basis for waste management practices for the future.

This inquiry has generated much publicity in the local press, with the main focus being on the possible introduction of big wheelie bins and charging households for using the tips. Although such publicity has raised the awareness of the community about the role of the newly formed Legislative Assembly and its decision-making powers, it has also served to deflect attention away from the broader issues of responsible waste management. It is the committee's hope that setting out the overall strategy in simple terms, will clarify the need for an efficient domestic waste collection system, and the means by which waste is minimised.

It must be stressed that although the report provides comprehensive policy directions, the Committee cannot be dogmatically prescriptive on the details of implementation. It is the proper role of the ACT Government to assess the financial implications of the Committee's recommendations and to decide how best they ought to be implemented. The Government has the expert advice available to it for this task.

### **The Overall Strategy**

The waste management strategy is based on a few simple elements, which environment groups, waste disposal organisations and the broad community would all agree upon. These elements are –

- . minimisation of waste
- . conservation of energy
- . re-use of resources

In the short term landfill is the most appropriate method of disposal because it is both economically viable and environmentally safer than other methods of disposal. However many steps can be taken to reduce the amount of waste being sent to landfill. These measures include waste minimisation and re-use of resources through recycling. The Committee believes that the efficient collection of domestic waste, waste minimisation and measures to encourage recycling of materials are inextricably linked.

The Committee has recommended therefore that a weekly collection of recyclables – glass, aluminium, paper, polyethylene terephthalate (PET) – be implemented on a door-to-door basis. This system will give every citizen in Canberra the opportunity to

participate in saving their resources.

This measure will ensure that every householder will be contributing less to the waste stream. Savings of approximately \$12.00 tonne will accrue through less demand for landfill space.

A number of complementary recommendations on recycling were also made to increase the facilities available for the collection of individual recyclables.

The community is aware that landfill resources are not unlimited and steps must be taken to ensure that the life of Canberra's tips is maximised. One way this can be achieved is through better management of landfill, daily compaction, and close supervision of the dumping of materials. This cannot be achieved whilst residents, between them, make an estimated one million trips to the tip sites each year. The Committee has therefore recommended that residents be given the capacity to dispose of the majority of their household waste through the provision of a total collection service. The total collection service will mean that there will be little reason for householders to visit the waste disposal facilities. They will be saved money through using less petrol and oil driving to the tip, and will have more spare time.

The total collection service consists of the provision of a wheelie bin for each house. In the case of flats, perhaps larger bins will be used. The "big bin" issue has certainly been the subject of media attention and community concern. Many of the concerns centred around the notion that a comprehensive recycling scheme was incompatible with the use of big bins. The Committee acknowledges these arguments and has recommended that the household recycling collection scheme be implemented before the introduction of wheelie bins to enable householders to get used to the program.

Although the cost of providing the bin is approximately \$80.00, it will have a lifespan of somewhere between 7-10 years. In the long run householders will be saved more money than this direct purchase price, because, amongst other savings identified in the report, they will not have to purchase a new bin every year.

The current maximum capacity for each householder to dispose of their wastes is 340 litres – two 85 litre bins collected twice weekly. However on average householders only use 140 litres. With 100% participation in a door-to-door recyclables collection scheme, it is estimated that householders will still need 110 litres of disposal capacity each week.

The introduction of a 120 litre size bin will not cater for the average needs of households. It will not help achieve a "total collection system" because there would be no capacity for the disposal of household garden and organic wastes. Savings identified by introducing the big bins, such as reduced need to visit the tips sites to dump garden clippings, better landfill management etc, would not accrue. The Committee cannot endorse the view that 120 litre bins will provide a sufficient service for Canberra residents.

The next bin size manufactured is the 240 litre bin. No company manufactures bins in a size between 120 and 240 litres. The Committee therefore recommends that the 240 litre bin be trialled for a period in Canberra, with a view to their introduction throughout Canberra.

The Committee believes that this recommendation should be judged in the context of other recommendations on the collection and disposal of domestic wastes. The big bin is stable, has a fitting lid to prevent dog strike, will not be blown over and will last for

many years.

In conjunction with this, the Committee has recommended that a hard rubbish collection be implemented. This will allow householders to get rid of large bulky wastes that cannot be disposed of through even the largest big bin. Householders will be able to dispose of old furnishings, and household items. Methods of implementing the system are discussed in the text. In addition, the Committee has recommended that householders be encouraged to compost organic wastes which otherwise they will discard. The Committee has also recommended that special recycling facilities be set aside at the tip sites.

The Committee's believes that with the household collection of recyclables, a hard rubbish system and a wheelie bin, the majority of householders will never again need to visit the tip and if they do, there will be adequate recycling collection points so that they won't need to visit the tip face itself.

It must be remembered that industry and commercial businesses contribute two-thirds of the total waste generated for disposal at landfill. Yet they, like households are not required to pay for the provision of these tipping facilities. This situation is inequitable in that no users of landfill are paying for their use. For the reason that valuable resources are being used, the Committee has recommended that tipping fees be introduced. All those who visit the tip face to dump rubbish will be required to pay. Canberra is the only capital city in Australia which does not place a value on the importance of conserving landfill resources.

It is recommended that those who visit the site to only dump recyclables not be charged.

The Committee is aware of the position of small businesses such as those servicing domestic trashpak or miniskip users and garden maintenance businesses. They use the tips regularly and may be concerned at passing the cost of tip fees onto their customers. This is why the Committee has recommended that a special site be set aside at the Belconnen landfill site for the disposal of organic wastes for which no charge will be imposed. The small businesses have a choice – to collect only garden wastes from customers thereby avoiding rises in the cost of their services, or to pass on the cost of tipping fees who wish to dispose on non-organic wastes in their trashpaks/miniskips.

The Committee appreciates the importance of informing all ACT residents of all changes to the domestic waste collection system. Education is of prime importance in ensuring high participation rates are maintained with the household recyclables collection. The Committee has recommended that reminders frequently be given to householders and that a special package be forwarded to all new residents with information not only on the domestic waste collection system, but local government issues of interest.

The third aspect of an efficient waste management strategy is that of waste minimisation. The less waste generated, the less demand there will be on recycling resources and landfill disposal. The Committee has therefore recommended measures which will contribute to the generation of less waste, especially in the packaging industry. Many of these measures require co-operation across State boundaries. The Committee recommends that the ACT enter into discussions with other States and Territory about these measures.

One aspect of waste minimisation that the Committee considered is the possible need to introduce container deposit legislation. The whole community must be aware of the litter problem – the Assembly's Standing Committee on Social Policy became

concerned about the litter problem during their investigation into public behaviour in the ACT. They received complaints from many citizens about the large mess left behind after outdoor celebrations such as the Food and Wine Frolic, the Summer Nationals etc. Many submissions lobbied for the introduction of container deposit legislation, whilst others lobbied against it.

It is the view of the Committee that the provision of a comprehensive household recycling scheme, and the provision of public recycling facilities will ensure that the return of recyclable containers is well catered for.

The Committee has acknowledged the concerns of the Social Policy Committee about the litter problem after outdoor celebrations and has recommended that organisers of such events ought to pay for the clean up costs. These clean up costs ought to be budgeted in the cost of producing the entire celebration. As well, the Committee has recommended that organisers provide for the collection of recyclables by having specific collection bins for glass, PET, and aluminium.

The Committee has also recommended that the ACT Government takes advantage of anti-littering campaigns and actively negotiates with industry to achieve this. If however these recommendations do not achieve their aim in reducing litter, the Committee recommends that the ACT Government consider the introduction of container deposit legislation.

Another aspect of container deposit legislation is that of refillable glass containers. The ACT Milk Authority in conjunction with ACI, one of Australia's largest producers of glass bottles, trialled the use of a non-refillable one litre milk bottle. Although heavier than the paperboard one litre carton, and 22 cents more expensive, the trial was a success for the promoters. However the Committee is concerned at the waste of resources if the glass litre bottle was to become a permanent consumable. As it is now, without container deposit legislation, approximately 95% of the 600ml glass milk bottle home delivered is returned by consumers. The bottle is refillable and the cost of producing the bottle is quite cheap because it can be used up to twenty times. The use of refillable glass bottles decreases by over 50% the sales of containers by glass beverage container manufacturers. For this reason, it is not surprising that manufacturers have moved away from the re-use of glass containers in order to maintain sales. The trial of the one-way one litre glass milk bottle highlighted the waste of glass – many of the 600ml glass bottles became available during the trial in competing supermarkets and although re-useable many consumers did not return them creating almost a shortage of 600ml bottles for home deliveries. The Committee is concerned that the ACT Milk Authority may wish to introduce the one litre glass bottles and recommends careful consideration of such a move.

The Committee believes that the commercial sector ought to be encouraged to recycle their resources, as householders will be required to do.

In terms of future technologies, there are a number of exciting new developments taking place in the waste management industry – on sewage ash composting, collection technology, environmentally sound disposal methods to name a few. The Committee has recommended that the ACT Government keep aware of these developments to ensure that the ACT has the best waste management system into the twenty-first century.

## **LIST OF RECOMMENDATIONS**

### **Recycling**

The Committee recommends that:

1. the ACT Government contract for a weekly door-to-door collection of recyclables, including glass, PET, aluminium, paper and cardboard (paragraph 3.3.66)
2. householders be provided with appropriate containers to be used for the collection of recyclables (paragraph 3.3.66)
3. the collection of recyclables be subsidised to ensure a well maintained service (paragraph 3.3.66)
4. participation in household collection of recyclables be made mandatory if participation rates are not acceptable (paragraph 3.3.66)
5. any contract for the collection of recyclables must be flexible enough to take into account future developments in technology (paragraph 3.3.66)
6. the location of recycling facilities in the ACT be better publicised (paragraph 3.4.5)
7. recycling facilities at both landfill sites and Ainslie transfer station be upgraded and access improved (paragraph 3.4.10)
8. the design and siting of the facilities at the landfill sites be reconsidered to ensure the householder does not need to enter the tip face (paragraph 3.4.10)
9. the ACT Government, in conjunction with PET manufacturers, increase consumer awareness of the capacity for PET to be recycled (paragraph 3.5.8)
10. the ACT Government, in conjunction with industry and industry associations, investigate the possibility of establishing a plastics recycling plant in Canberra (paragraph 3.5.24)
11. biodegradable plastic shopping bags be banned from use in the ACT until such time as it is proven that they are environmentally sound (paragraph 3.5.27)
12. the ACT Government discuss with the other State, Northern Territory and Commonwealth Governments, and private industry, the possibility of limiting plastics used in food and beverage containers to those types which are more readily recyclable (paragraph 3.5.31)

13. the ACT Government not introduce additional glass banks until after assessing the success of the door-to-door collection of recyclables (paragraph 3.5.38)
14. the existence of oil recycling facilities be more widely advertised (paragraph 3.5.59)
15. the ACT Government investigate the possibility of establishing oil collection points at the Ainslie transfer station, the new Tuggeranong recycling centre and the Belconnen and Phillip recycling centres (paragraph 3.5.59)
16. the ACT Government in conjunction with the Motor Traders Association and service stations, extend and promote waste oil collection facilities in service stations (paragraph 3.5.59)
17. the ACT Government negotiate with the other State, Northern Territory and Commonwealth Governments, on the possibility of introducing mandatory requirements that newspapers contain a certain percentage of recycled newsprint (paragraph 3.5.84)
18. wherever possible the ACT Government take steps to introduce paper recycling measures into all of its offices (paragraph 3.5.93)
19. the ACT Government educate its own employees about paper recycling (paragraph 3.5.93)
20. the ACT Government review its policy on shredding and disposal of sensitive documents in collaboration with the Commonwealth Government with the aim of maximising the recycling potential of its waste office paper (paragraph 3.5.98)
21. a special area at the Mugga Lane landfill area be put aside for the disposal of tyres (paragraph 3.5.103)
22. an appropriate fee be charged for the disposal of the tyres (paragraph 3.5.103)
23. the ACT Government, in conjunction with Corkhill Bros, better publicise the existing composting facility at Mugga Lane (paragraph 3.5.116)
24. the ACT Government inform the community on how to compost and measures to minimise organic waste going to landfill (paragraph 3.5.116)
25. the ACT Government call for expressions of interest for the collection or setting up of a compost plant on or near the West Belconnen landfill area (paragraph 3.5.116)
26. the ACT Government investigate the possibility of a special collection bin at the Ainslie transfer station for organic wastes which can be transferred to composting facilities at landfill (paragraph 3.5.116)
27. the ACT Government set aside an area at the Tuggeranong recycling centre for the collection of organic material (paragraph 3.5.116)



### **Options for Efficient Collection of Domestic Waste**

The Committee recommends that:

28. the most efficient method of collection of domestic waste is the one-person collection system in conjunction with the use of big wheelie bins (paragraph 4.4.23)
29. the ACT Government refer to the Interim Territory Planning Authority the difficulties faced by residents in poorly designed narrow streets in receiving kerbside collection of their waste (paragraph 4.4.23)
30. the ACT Government trial the use of 240 litre bins in a selected zone in Canberra, with the aim of introducing big bins in all zones (paragraph 4.4.29)
31. the trial use of big wheelie bins be introduced well after the recommendations relating to door-to-door collection services and recycling measures are introduced (paragraph 4.4.29)
32. with the introduction of big bins, domestic waste be collected weekly (paragraph 4.4.29)
33. the ACT Government negotiate with unions well before the planned introduction of the one-person collection system (paragraph 4.4.34)
34. the ACT Government introduce a hard rubbish collection for all householders on a 'needs' basis (paragraph 4.5.6)

### **Options for Efficient Collection of Commercial Wastes**

The Committee recommends that:

35. commercial premises be required to provide for the collection and disposal of the bulk of recyclable materials generated (paragraph 5.3.8)
36. the ACT Government investigate the need for legislation to enforce recycling in the commercial sector (paragraph 5.3.8)
37. the ACT Government investigate the extent to which builders' spoil can be recycled, especially its use in relation to:
  - (i) road building
  - (ii) community recycling in Tuggeranong and other new areas (paragraph 5.3.16)



## **Litter and Waste Minimisation**

The Committee recommends that:

38. the ACT Government consult with the other State, Northern Territory and Commonwealth Governments to consider ways of reducing the amount of packaging materials now used throughout the community including government agencies (paragraph 6.2.5.)
39. to minimise waste, the ACT Government consider the introduction of a 'green spot labelling' program (paragraph 6.3.4)
40. the ACT Government liaise with the other State, Northern Territory and Commonwealth Governments on any such scheme to ensure uniformity across State boundaries (paragraph 6.3.4)
41. the ACT Government take steps to reduce the amount of littering through introducing more stringent legislation, including a requirement that trailers be covered, and increasing penalties for littering (paragraph 6.4.6)
42. all litter bins in public places maintained by the ACT Government, have well fitting lids (paragraph 6.4.6)
43. the ACT Government enter into discussions with the New South Wales Government, Litter Research Association and the Australian Soft Drink Association and other beverage and packaging bodies, about participation in an anti-litter campaign for the ACT (paragraph 6.5.21)
44. the organisers of major public events such as the Canberra Festival, Summer Street Car Nationals etc be charged for any clean up costs incurred through littering at these events (paragraph 6.5.21)
45. the organisers of public events provide special recycling containers for the collection of glass, PET and aluminium (paragraph 6.5.21)
46. if, after all of the above littering policies recommended are ineffective in their aim of reducing litter, the ACT Government consider the introduction of container deposit legislation (paragraph 6.5.21)
47. the ACT Milk Authority carefully consider and publicly specify any gains that can be made if the one litre non-refillable milk bottle is permanently introduced into the ACT (paragraph 6.6.14)

## **Public Education**

The Committee recommends that:

48. the ACT Government, when introducing the recommendations on recycling, inform the community through both the electronic and printed media (paragraph 7.2.9)
49. the ACT Government regularly remind citizens of recycling initiatives, their contribution to recycling, how to minimise waste and the location of recycling facilities (paragraph 7.2.9)
50. the ACT Government consider how public queries on recycling will be handled and the possible creation of a position within the Office of City Management to handle such queries (paragraph 7.2.9)
51. the ACT Government introduce a 'New ACT Resident' package with information on waste collection services (paragraph 7.3.4)

## **Landfill and other Waste Management Practices**

The Committee recommends that:

52. fees for all tipping in the ACT be introduced (paragraph 8.2.14)
53. initially fees be charged at \$1.00 for cars, \$2.00 for cars with trailers and a graduated scale of charges for trucks depending on their type and size (paragraph 8.2.14)
54. householders and other tip visitors not be charged to drop off recyclables (paragraph 8.2.14)
55. no fees be charged for the depositing of purely organic wastes at specified areas within the landfill sites (paragraph 8.2.14)
56. the ACT Government install a weighbridge at each landfill site (paragraph 8.2.19)
57. the ACT Government continue to plan ahead for future landfill needs of the ACT by setting aside special areas now (paragraph 8.3.5)
58. the ACT Government, in conjunction with Revolve or other similar group, expand scavenging operations to the West Belconnen landfill site (paragraph 8.4.6)
59. the ACT Government encourage householders to drop reusable goods at the Revolve operations rather than at the tip face by placing signposts at the entrance to the tip (paragraph 8.4.6)

60. the ACT Government investigate and report on the possibility of a methane extraction plant being installed at both landfill sites (paragraph 8.5.14)
61. as further landfill sites are developed, the ACT Government adopt a policy of providing for the harnessing and utilisation of methane (paragraph 8.5.14)
62. the ACT Government take account of new and developing waste management technologies (paragraph 8.6.12)
63. the ACT Government investigate and report on;
  - the possibility of using sewage sludge with organic wastes to make organic compost
  - alternatives to landfilling sewage ash (paragraph 8.7.14)
64. the ACT Government provide for the construction of a special facility to dispose of grease trap and oil wastes (paragraph 8.8.6)
65. the facility be run on a fee for service basis (paragraph 8.8.6)

## **1. METHOD OF INQUIRY**

1.1 The Committee advertised for submissions to the inquiry through the 'Canberra Times' and 'The Australian' on the weekend of 15 July. 1989. Submissions received are listed at Appendix 5.

1.2 The Committee held a public hearing on 15 September 1989. Appendix 6 lists the witnesses who appeared at that hearing.

1.3 The nature of the inquiry meant that it was important for members to investigate what waste management policies and strategies other States and councils had developed. To this end all four of the initial members travelled to Sydney for a three-day visit on 3, 4, and 5, September 1989. Two members travelled to Melbourne on 30 and 31 August 1989. The organisations and individuals members met with interstate are listed at Appendix 7.

1.4 Also at Appendix 7 is a list of those facilities in Canberra visited by the members of the Committee. Members of the new Committee visited Mugga Lane tip on 5 February 1990.

## **2. CURRENT DOMESTIC WASTE MANAGEMENT PRACTICES**

### **2.1 Volume of Domestic Waste Generated**

#### **Total Waste Volume**

2.1.1 The total amount of waste generated for disposal each year in the ACT is 314,000 tonnes comprising:-

|                       |               |       |
|-----------------------|---------------|-------|
| Domestic Waste        |               | 35.0% |
| . Household Delivery  | 74 450 tonnes | 23.7% |
| . Domestic Collection | 37 000 tonnes | 11.8% |
| Trade Waste           | 50 000 tonnes | 15.9% |
| Builders Spoil        | 92 500 tonnes | 29.4% |
| Queanbeyan            | 25 000 tonnes | 8.0%  |
| Other                 | 35 000 tonnes | 11.2% |
| . Other               | 15 000 tonnes | 4.8%  |
| . Litter              | 13 300 tonnes | 4.2%  |
| . Sewage Ash          | 7 000 tonnes  | 2.2%  |

#### **Volume of Domestic Waste**

2.1.2 The amount of domestic waste collected from all households by the garbage contractors in the ACT is estimated to be 37 000 tonnes per annum which is approximately 12% of the total waste generated in the ACT every year.

2.1.3 As well, households themselves deliver 74 450 tonnes of garbage per annum to the tip face and transfer station, which is approximately 23.1% of the annual total waste volume.

2.1.4 Together these two equal 111 450 tonnes per year of domestic waste representing a waste generation rate of 400kg per person per year. This compares with the Sydney rate of 302kg per year and Melbourne rate of 295kg per year. The Office of City Management submitted that the reason for the per capita waste generation difference between Canberra and the other capitals is the large amount of household waste disposed by households. This reflects the large proportion of low density housing in Canberra with much organic waste generated through maintaining gardens.

## **Volume of Commercial Waste**

2.1.5 The Office of City Management provided tonnages on the amounts of commercial waste going to landfill. They noted that it was difficult to determine the quantity of this waste accurately because there are no means by which tonnages can be weighed.

2.1.6 Figures above show trade waste to be almost 16% or 50 000 tonnes of the total waste volume, with builders' spoil adding another 92 500 tonnes or 30% of the total waste volume.

## **2.2 Waste Disposal Facilities**

### **Transfer Station**

2.2.1 A transfer station is operated at Ainslie. Householders are free to drive in and unload their rubbish into a number of marked bays. Collection facilities for recyclables are also provided at the transfer station. The contract for the running of the station costs \$180 000 with \$20 000 for repairs and maintenance each year.

### **Recycling Depots**

2.2.2 Two recycling depots have been established, one at Botany Street, Phillip; the other in Jolly Street, Belconnen. Paper cages, containers for aluminium, bales for PET, and containers for three different colours of glass are provided for the disposal of recyclables.

2.2.3 Infrastructure of the recycling centres was provided by the ACT Administration. APM and ACI clear the containers and promote recycling.

2.2.4 A third recycling depot has been approved for Tuggeranong, opposite the bus depot. This is due for completion by the end of 1990.

### **Landfill**

2.2.5 Currently the ACT operates two landfill areas – at Mugga Lane on the southside and West Belconnen on the northside. The Mugga Lane landfill site, including the recent expansion, will have a life of eight years. Future plans include extension into a nearby unused area. The West Belconnen site will have a life expectancy of ten years. There are future plans for expansion into an adjacent unused area. These tips have been in operation since 1975.

2.2.6 There is also a special area at West Belconnen landfill site for tyres, another area for builders' spoil and so on.

## **Management and Cost of Disposal Sites**

2.2.7 The landfill sites are owned by the ACT Government and operated using ACT staff, plant and equipment. The Ainslie transfer station is operated under a contract with Waste Hawk which supervises the site and delivers the waste to the West Belconnen landfill site.

2.2.8 The operating costs of the two landfill sites was in excess of \$1.65 million in 1988/89. Taking into account the development costs of the sites, the average cost of landfill disposal is estimated by the Office of City Management to be \$12.00 per tonne. The ACT Administration already owns the landfill site and thus the cost of land is not included in the above costs for landfill in the ACT.

## **Payment for Use of the Landfill Sites**

2.2.9 No charges apply to any user of the landfill sites, (except Queanbeyan Council) or the recycling centres or Ainslie Transfer Station. The contractors collecting domestic waste, commercial contractors, the Commonwealth and householders all have free access to the landfill sites. It is claimed by the Office of City Management that the facilities are also used by the population in adjoining geographical areas. For example tyres are transported from Cooma for disposal.

## **Agreement with Queanbeyan**

2.2.10 The landfill sites listed above service Canberra (population of 278 000) and Queanbeyan (population 24 000). In 1988, the ACT entered a five-year agreement with Queanbeyan to allow the disposal of all Queanbeyan's solid waste to the ACT's landfill areas. Under the agreement for 1989, Queanbeyan paid the amount of \$242 740 to cover the costs of disposal. This figure is based on the population of Queanbeyan.

2.2.11 The agreement allows time for Queanbeyan to consider its long-term waste disposal options.

## **2.3 Domestic Waste Collection**

### **Role of the Government in the Collection of Domestic Wastes**

2.3.1 The Government provides for the collection of waste from households in the ACT. This is regulated under the Building and Services Act (1924) and the associated Garbage Regulations.

2.3.2 Each household may leave out two 85 litre bins which are collected twice weekly. Thus each household has a disposal capacity of 340 litres every week. On average, households leave out 2.2 bins per week; these bins vary in size from 55 to 85 litres. The service does not provide for the collection of garden waste or large

items of hard rubbish.

2.3.3 The Government contracts out the actual collection of domestic wastes as explained below.

### **Domestic Waste Contracts**

2.3.4 The ACT Government has a contract with Waste Hawk to collect from all households on the southside of Lake Burley Griffin. The contract with Waste Hawk, which is owned by Thiess, runs for seven years with a two year option. The contract is in its third year. The ACT has five separate contracts with small businesses to collect from seven designated areas on the northside. There is no benefit accruing to the waste contractors if maximum volumes are not collected – payment under the contract is based on the actual volume collected and not the possible maximum volume.

### **Other Collections**

2.3.5 Some domestic waste at medium density housing estates is containerised and collected under these contracts. About 1 000 tonnes is also collected by the Office of City Management trade waste fleet from residential areas not provided for under existing domestic waste contracts.

### **Waste Collection Depot and Equipment**

2.3.6 The ACT Government owns and maintains its own fleet of garbage trucks – 15 trucks for the southside and 10 trucks for the northside. The contractors provide fuel and labour. The ACT also owns its own garbage depots in which the trucks are garaged. These two depots are located at Mitchell and Phillip.

2.3.7 The ACT has an ongoing capital replacement program whereby trucks are regularly replaced at the end of their economic life.

2.3.8 There are specific advantages in the Government owning its own fleet and depots, including:–

- savings in cost of contracts because, as a government body, no sales tax is charged on the equipment
- direct control over the fleet. This is important during industrial disputes
- a more secure service is provided than that of smaller contractors who may be unable to face capital costs of equipment replacement and maintenance



## **Cost of Domestic Waste Collection**

2.3.9 The direct expenditure by the ACT Government of the total domestic waste collection service is over \$3 million per year.

2.3.10 On average it costs approximately \$39.00 per year to collect waste from each household and to maintain the garbage truck fleet. The calculation of this cost is derived from the table below which is also reproduced at Appendix 3.

**Table 1 – Household Waste Collected 1988–89 – costs measured in dollars per annum, waste measured in tonnes per annum.**

|       | No. of<br>h/holds | Waste<br>collected<br>tonnes | Repairs/<br>mainten.<br>\$ | Costs of<br>collect.<br>\$ | Average<br>cost per<br>h/hold |
|-------|-------------------|------------------------------|----------------------------|----------------------------|-------------------------------|
| North | 42 444            | 16 600                       | 225 000                    | 1 020 296                  | \$29.43                       |
| South | 48 890            | 19 300                       | 337 500                    | 2 012 895                  | \$48.08                       |
| <hr/> |                   |                              |                            |                            |                               |
| Total | 91 334            | 35 900                       | 562 500                    | 3 033 191                  | \$39.37                       |

2.3.11 On top of this cost, is the average cost of purchasing trucks which have an economic life of seven years. The average cost per household for this component is \$7.00 per annum. Other overhead costs result in a further \$2.00 per household per annum.

2.3.12 Together, all of these components equals approximately \$48.00 for the total cost of waste collection for each household per annum.

## **Role of the Private Sector in the Collection of Domestic Waste**

2.3.13 Capitalising on the fact that the domestic waste collection does not provide for the removal of organic waste, a number of relatively small businesses operate a service collecting waste from households. The 'trashpak' and 'miniskip' are commonly used.

2.3.14 Trash is defined as bulky non-hazardous commercial and domestic dry waste. The service is useful to those households who do not have any other opportunity to get rid of unwanted waste, especially organic waste. A collection fee is charged for pick-ups which are usually monthly. It was submitted that approximately 10 000 households and businesses in Canberra take advantage of the trashpak service.

### **3. RECYCLING**

#### **3.1 Overall Strategy**

##### **Recycling Strategy**

3.1.1 Even though landfill may be the cheapest and most environmentally sound way to dispose of non-toxic wastes, it is necessary that a comprehensive waste management policy ensure that the minimum amount of wastes are sent to landfill. This is to ensure that maximum use is made of resources. Recycling is an important part of this strategy.

3.1.2 The Committee believes that recycling is a viable long-term contribution to better waste management. The Committee recognises that a comprehensive recycling strategy would reduce landfill costs and conserve natural resources.

3.1.3 The ACT is fortunate in that as a city-state, one tier of government has full control of waste management policy.

3.1.4 The Commonwealth Department of the Arts, Sport, Environment, Tourism and Territories submitted that the role of government in recycling is to ensure that the principle of user and polluter pay is applied. It submitted that currently the user pay principle is not benefiting society, that there is a failure of the market and lack of competition for recyclable material, and that the real cost of disposing of wastes is not fully taken into account.

3.1.5 Components of a comprehensive recycling strategy include:—

- . multi-material door-to-door collections
- . extending the network of static collection centres
- . improving the markets for recycled products
- . improving the capacity for materials to be recycled
- . promotion of composting

Each of these strategies will be discussed at length in this chapter.

##### **Recycling Targets**

3.1.6 The Office of City Management estimates that the maximum level of recycling of the total volume of household waste attainable is 28.3% (outlined at Appendix 4). This excludes the possibility of composting most household organic waste. Given that level, there will still be much domestic waste to be collected and disposed at landfill. However the Committee is most optimistic about achieving a higher rate of recycling, including recycling of organic waste. The public support for conservation of resources is extremely encouraging. Almost all submissions received called for the introduction of

some type of recycling scheme. Those who called for the introduction of big bins also wished to have wider choices made available to encourage positive recycling.

3.1.7 The recycling ethos is indicated in the 1986 Australian Bureau of Statistics survey of community attitudes to recycling which showed that the ACT had one of the highest recycling participation rates, especially for paper recycling. This rate is despite the lack of a well developed recycling structure in the ACT. The Committee expects an outstanding response once a comprehensive recycling program is implemented.

3.1.8 In addition, measures to encourage the recycling of builders' spoil and other commercial wastes would significantly decrease the demand for landfill.

### **National Cooperation**

3.1.9 The Office of City Management submitted that one option to improve recycling is through national cooperation between State and Federal Governments to develop a long-term recycling and waste management strategy. The Waste Resources Advisory Committee of the Australian New Zealand Environment Council is working to achieve this aim.

3.1.10 The Office also believes that, at a national level, a recycling coordination program ought to be implemented. The aim of such a program would be to coordinate the transportation and supply of recyclables such as paper from regional centres to those reprocessing plants which can handle the supply.

## **3.2 Current Recycling Services and Facilities**

### **Recycling Facilities for Individual Materials**

3.2.1 Listed below are the facilities which exist for the collection of individual recyclable materials.

#### **P.E.T.**

3.2.2 Collection points for polyethylene terephthalate (PET) are at the West Belconnen and Mugga Lane landfill sites and the recycling depots at Phillip and Woden. Waste Hawk transports PET to ACI Petalite in Sydney in conjunction with the glass it collects and transports for the ACI Glass Division.

3.2.3 Smorgon Plastic also collect PET in Canberra with a collection bale at the Ainslie transfer station.

3.2.4 There are no costs to the ACT Government for this scheme.

### Other Plastics

3.2.5 S & E Recycling currently collects soft plastics and transports them to Southern Wastes in Sydney. Plastic Recyclers Ltd operating from Hume also collects plastic for recycling. It is not known in what quantities plastics from the ACT are collected or recycled.

### Glass

3.2.6 Glass bottle banks are located in the suburbs at Chisholm, Erindale, Kambah, Manuka, Fyshwick markets, Kingston, Kaleen, Jamison, Campbell and two locations in Queanbeyan. Collection centres for glass are also located at the Belconnen and Mugga Lane tips, Ainslie transfer station, Fyshwick and the two recycling centres at Phillip and Woden.

3.2.7 The bottle banks are owned by ACI and their agents GTC Recycling who, under a letter of agreement with the ACT Government, has agreed to accept all cullet (broken glass) generated at these centres and to pay \$107 per tonne for clean sorted cullet on arrival at ACI's reprocessing plant in Sydney. This price includes a freight subsidy of \$15 per tonne.

3.2.8 GTC Recycling are subcontracted to ACI to collect the glass from the above collection points and to transport the glass to Sydney. The company stores the glass at a depot in Fyshwick which is made available to ACI at a nominal annual rent, representing an effective subsidy of \$13 000 per year.

### Aluminium

3.2.9 Recycling of aluminium cans has been left to private industry to organise primarily through the 'Cash for Cans' campaign.

3.2.10 Metal recyclers such as MG Metals have "buy back" centres for aluminium cans in Kippax, Weetangera, Dickson, Woden Plaza, Pearce, Erindale Centre, Queanbeyan and Seiffert Oval (during matches). Aluminium cans had a recent value of \$1.00/kg which has fallen.

### Ferrous Material

3.2.11 The ACT Government ensures the disposal of dumped car bodies and white goods in the ACT. Wanless Scrap Metal Pty Ltd. were awarded the contract under which the company is required to accept all car bodies and white goods delivered by the public, government or industry. It recycles 2,350 tonnes of metal annually for a franchise of \$62 000 per annum.

3.2.12 The private sector also collects and recycles scrap metal from local manufacturing industries and the public. The ACT Government bears no cost for this activity.

3.2.13 Most metal in domestic garbage is low in scrap value and usually contaminated by other materials such as food. Steel cans are not economical to recycle because they have soldered seams and are lined with tin which has to be removed before reuse.

## Oil

3.2.14 Facilities exist for the disposal of waste motor oil at both West Belconnen and Mugga Lane landfill sites. There is none at Ainslie transfer station nor at the recycling depots.

3.2.15 The Motor Traders Association have supported a program whereby service station proprietors accept waste oil and store it until it is collected. The ACT Government pays Canberra Oil Disposals to collect waste oil from participating service stations at the rate of 7 cents per litre. The company is required to take the oil to the landfill sites and dewater it, after which it is stored in bulk storage tanks. The contractor also collects from government workshops, private garages, industrial service stations and commercial sources. The ACT Government is then paid 3 cents per litre by Independent Oil Refineries upon collection of the oil from the bulk storage tanks at the landfill sites. It is then transported to Sydney and treated.

3.2.16 Waste oil may be either refined, sold as bunkering fuel to ships, or used to increase coal bulk density and calorific value.

3.2.17 A private operator collects and recycles cooking oil at no cost to the ACT Government.

## Paper and Cardboard

3.2.18 A monthly door-to-door collection of paper and cardboard is operated by the Canberra Paper and Cardboard Recycling Co. Collection cages for paper are located at the recycling centres at Belconnen and Phillip, the landfill sites at Mugga Lane and West Belconnen and the Ainslie transfer station. Paper has the widest collection coverage of any recyclable.

3.2.19 The company is paid a subsidy of \$6.50 per tonne by the ACT Government both to collect paper from the cages and to provide a monthly domestic door-to-door collection service.

3.2.20 Waste paper is also collected from government offices. It is usually contaminated with foodstuffs etc and needs sorting before sale to the paper mills. Schools, shops, offices and industry are also serviced by a paper collection service.

3.2.21 The contractor then bales and sells all the paper collected to APM with whom there is an agreement.

3.2.22 In 1988/89 5,260 tonnes were collected from the above sources (approximately 105 tonnes per week). However, overall the company claims to collect about 300 tonnes per week.

3.2.23 In addition, S & E Recycling have established themselves in the ACT to collect paper and cardboard. S & E Recycling is a commercial waste firm which purchases paper/cardboard from commercial firms which bale their own waste thus reducing the effort needed in collecting the material. Paper collected through these other sources is sold to Visy Board in Melbourne for recycling.

3.2.24 At one time, Koomarri collected paper and cardboard from a range of outlets in Canberra but had to stop collecting because the price they were being paid for the paper did not cover the cost of the operation. Any organisation in that situation cannot sustain non-profitable activities without a subsidy.

3.2.25 According to industry, 14 500 tonnes of paper from the ACT are recycled per annum.

### Tyres

3.2.26 Because tyres do not compact as easily as other rubbish at landfill, they are buried separately at the Belconnen landfill sites in case they may one day be retrieved for recycling.

3.2.27 The Office of City Management estimated that currently 180 000 cubic metres of tyres are stored at Belconnen. The commercial sector disposes of 10 000 cubic metres of tyres each year at landfill.

### Organic Waste

3.2.28 Garden waste is largely disposed through private trips to the tip. Householders are not allowed to put out garden refuse in their domestic garbage. From surveys on the composition of household garbage, food and garden waste comprise 44.5%, and garden waste 6.6% of the waste.

3.2.29 Corkhill Bros. Sales Pty. Limited have a commercial recycling business situated adjacent to the Mugga Lane tip face where garden waste, sawdust, prunings, soil, wet chicken manure, building and demolition rubble is recycled. This site facilitates use by the public because of its proximity to the tip face. Government vehicles, such as those from the ACT Parks and Conservation Service who regularly have clippings, use the facility when convenient.

### Composting by the ACT Government

3.2.30 Organic material from street sweepings is reused by composting. Approximately 30 tonnes per year are stockpiled at the Mitchell spoil dump for collection by the public and is not dumped at tips.

3.2.31 The ACT Parks and Conservation Service generates municipal agricultural wastes which are dumped at a network of tip sites throughout the city area. Tree surgery wastes are regularly stockpiled for later collection by members of the public.

3.2.32 The ACT Parks and Conservation Service also generates organic waste. Prunings are coarsely shredded and used as mulch or compost ingredients for flower beds. Non-shreddable material is often used for firewood by disposal to community or service clubs. 750 tonnes per annum of organic material is recycled.

3.2.33 The Office of City Management submits that it cannot estimate the amount of recyclables which are in the commercial and government waste streams. No sampling has been carried out.

3.2.34 There is no program in place for the recovery of organic wastes generated by the commercial sector.

### **Recycling at the Tlp Face – Revolve Ltd.**

3.2.35 Revolve Ltd. Job Creation and Recycling is the only licensed group to scavenge at any of the landfill sites in Canberra. They are a community group situated at the Mugga Lane landfill site. They salvage small valuable saleable items. Recyclables such as PET plastic, glass, paper etc are not salvaged.

3.2.36 The salvaged items are offered for sale seven days per week just inside the entrance to the tip. Operations started in July 1988 and weekly turnover is approximately \$2 500.

3.2.37 The operation has a negligible impact on the volume of waste going to landfill. The group's main aim is to provide employment.

3.2.38 Since commencement in 1988 the cost to the Government has been \$20 000 for the provision of fencing and site works.

### **Cost of Present Recycling Program**

3.2.39 The Office of City Management submitted that the current recycling program encourages people to sort a number of materials from the waste stream including motor oil, paper, glass, PET containers, aluminium and metal.

3.2.40 There were overall costs associated with the present recycling program – these include capital costs of setting up recycling collection centres, the administration costs involved with the recycling program and costs of removing litter from around collection points. It estimated that the costs for the 1989/90 recycling program will be \$375 690.

3.2.41 The cost of the individual components of the present recycling program is broken down as follows:—

|                                       |                |
|---------------------------------------|----------------|
| . Revolve Ltd site works              | 20 000         |
| . Oil recycling fee                   | 52 500         |
| . Rent subsidy for ACI—Fyshwick Depot | 13 000         |
| . Paper recycling fee                 | 34 190         |
| . Wages and on—costs                  | 86 000         |
| . Upgrading of facilities             | <u>170 000</u> |
|                                       | \$ 375 690     |

3.2.42 These costs have offsetting savings from landfill disposal costs of \$251 000 calculated by multiplying the total tonnage of recyclables saved (20 905 tonnes) by the cost of landfill disposal (\$12.00 tonne). However this figure may or may not be realised given the fixed capital costs of landfill operations.

### **3.3 Multi-Material Door-to-Door Collection of Recyclables**

#### **Need for Household Collection of Recyclables**

3.3.1 The Committee believes that the main arm of an effective recycling strategy is the implementation of a door-to-door collection service of recyclable materials. In this way individuals and households are encouraged to accept responsibility for recycling at the point of waste generation.

3.3.2 Evidence from submissions for the need for such a service include:—

- . it is the easiest means by which recyclables are taken out of the waste stream
- . it is very difficult for older people living alone and those with no available means of transport to take garden rubbish, bottles and other recyclables to the tip or recycling centres. Door-to-door collections of all types of rubbish would help alleviate this problem.

#### **Use of Recycling Containers**

3.3.3 The experience of numerous councils and waste management firms is that the provision of special recycling storage containers for recyclable material increases community participation.



## Bags

3.3.4 ACI Glass Manufacturers in conjunction with the Environment Protection Authority (EPA) developed a recycling bag in order that ACI achieve a specific recycling target within a specified time. This target was set for all manufacturers of packaging to meet. Councils in both Victoria and NSW are using the bag which is made of woven synthetic material, to encourage householders to place glass containers in the bag and leave it out for collection by bottle merchants.

3.3.5 The bag was trialled in late 1985 in Victoria. To date 66% of the metropolitan area of Melbourne is serviced by the bags. There is a 46% coverage of rural areas. The bags eliminate any embarrassment residents may feel in putting out volumes of glass containers, especially glass containers used for alcohol.

3.3.6 Collection of bags is usually on garbage day and separate to the garbage collection. Bottle merchants empty the contents onto bins in trucks and return the bag to the householder. Participation rates vary between councils. In some jurisdictions, collection costs of between 3–7 cents per household have been quoted. However the bags are put to other uses by residents thus increasing the cost of replacement. ACI have introduced this recycling bag for a trial period in the ACT coinciding with the trial of the one litre milk bottle.

3.3.7 It was impressed upon the Committee that recycling bags were a good means to test the market, but to ensure sustained progress and commitment to recycling, hard container bins for recyclables were the best.

## Boxes

3.3.8 Other councils, such as the Woollahra Council visited by the Committee have been using waxed sturdy cardboard boxes for collecting recyclables which last for quite a number of collections. The brightly coloured boxes identify the day on which the box is to be collected. The Committee was told that non-participating households are motivated to use the boxes when neighbours regularly leave out full containers of recyclables for collection. The recyclables collected in this way include paper (newspaper, cardboard, magazines), glass (bottle and jars), PET and aluminium cans.

## Bins

3.3.9 One submission stated that big bins could be introduced to service flats in Canberra – used only for collecting recyclables. A number of clearly marked bins would be ideal for collecting a number of recyclables from a number of residences.

3.3.10 Another suggestion was that a recycling levy of \$3.00 per household be charged for payment of household collection of recyclables.

## **Frequency of Collection**

3.3.11 It is obvious to the Committee that a household collection service ought to be reliable and frequent. This view was reinforced by both a number of submissions, meetings conducted by the Committee and the comments by the Australian Environment Council in its report on the impact of big bins on recycling. Such a recycling scheme is further enhanced when recyclables are collected on the same day as garbage.

3.3.12 Opinions on the frequency of collection of recyclables varied considerably. Some of the options submitted to the Committee include:—

- . weekly pick-up
- . alternative weekly pick-up of paper with glass and other recyclables
- . once monthly pick-up for each of the four main recyclables viz. glass, paper, aluminium and PET

3.3.13 Canberra Paper and Cardboard Co have found that the optimum financially viable collection period for household paper is four weeks. An unsubsidised recyclables collector in Sydney also collects on a monthly basis because it is more economical to do so. It is difficult to gauge the optimum frequency for all recyclables because there are no door-to-door collection of other recyclable materials.

## **Source Separation**

3.3.14 Recyclables collected from households can either be sorted by the householder when discarding recyclables or at a central location after collection.

3.3.15 Pacific Waste Management claim that the success or failure of any recycling program is dependent only on the willingness of householders to recycle, and not on the ability of the householder to separate at source.

3.3.16 Another submission called for segmented bins which would allow for the collection of separated recyclables.

3.3.17 One submission argued that paper ought to be collected from households on a separate collection service and that householders and commercial premises be provided with a paper bin and compulsorily made to recycle paper products. Another submission also called for the use of specific bins for paper collection to avoid the mess created by the door-to-door collection of paper and cardboard.

3.3.18 In Germany a system of three big bins is used by householders to ensure separate collection of recyclables. In one USA municipal area, householders require 10 recycling bins. Fines are imposed on those who incorrectly sort.

3.3.19 One submission claimed that in Switzerland, kitchen bins were divided into four compartments to take account of sorting recyclables in the home. The Committee is aware that innovative designs and technologies are used overseas and is keen to capitalise on them.

3.3.20 Many submissions expressed the belief that it would be less manually intensive if recyclables were sorted at source. The Office of City Management and many other individuals and organisations submitted that separation of recyclables by the household is the most effective method of collection.

3.3.21 Some submissions to the Committee stated that even with designated containers for particular recyclables, it would not be guaranteed that all householders would perfectly separate recyclables. If only a small percentage of householders accidentally put organic material in the paper bin for example, the system would be ruined. For these reasons, sorting should also occur after collection.

3.3.22 One submission noted that in one country domestic garbage is sorted not by the householder but after it has been collected. It claimed that using a conveyor belt and manual labour, 35% of garbage is 'reclaimed' as recyclables.

3.3.23 A similar argument was that recyclables could all be collected together in one container, except paper. Once collected, each recyclable would be sorted at one central off-loading site. A conveyor belt could be used to move the recyclables through a manual sorting process. This would have the advantage that the extent of sorting would be made dependent upon the markets for each of the recyclables.

3.3.24 The Trades and Labour Council recommended that sorting occur at two stages – firstly the household would separate into three types:–

- (a) glass, metals, plastics, wood, rubber
- (b) paper
- (c) everything else

3.3.25 Each of the contents of the bins would be transported to a transfer station where the refuse would be further sorted into glass, metals, plastic, wood, rubber, paper, putrescibles, non-recyclables

3.3.26 However, according to one submission, this could result in infections and cross contamination of recyclables. The Committee has been informed that paper is one recyclable that should never be contaminated, especially by such materials as glass.

3.3.27 The Committee accepts evidence that the most successful recycling schemes are those which are based on separation and collection of wastes at the household level.

### **Participation Rates in Household Collection Program**

3.3.28 The submission by Thiess Contractors and Waste Hawk both claim that at most recycling participation rates of householders would be 30–40%. This could be achieved through a weekly household collection service. In some Sydney councils, participation rates have trebled with the provision of a specific container for recyclables.

3.3.29 One view brought out in the submissions is that recyclables collection services provided or backed by community groups retain a much higher participation rate than those provided by a contractor.

### **Collection Technology**

3.3.30 One of the issues looked at by the Committee is the means by which materials are collected.

3.3.31 The Committee discussed with operators and councils both the feasibility of sorting recyclables on the run and the type of machinery and trucks which could be capable of the job.

3.3.32 In following up the assertions that the most effective household service was offered on the same day garbage is collected, the Committee was interested in whether it was possible to have a single truck pick up both recyclables and waste on the one run. One idea was that a divided big bin – householders put recyclables on one side and waste on the other side of the bin. The bin could then be collected using an automated arm, with matching chutes on the truck into which refuse from each side of the bin is deposited.

3.3.33 However the Committee realises that overspecifying any new tenders for domestic waste collection has pitfalls – the optimum solution may not be achieved. Discretion ought to be left to the private sector to suggest possible solutions.

3.3.34 A recyclables collector from Sydney recently renovated his truck specifically to cater for all recyclables, except paper (because it would take up too much space). The truck contains five compartments, each of which is divided by moveable partitions to enlarge or shorten any individual compartment. The contractor sorts glass into green, white and amber, PET and steel cans whilst on the run. Aluminium is also collected. Glass is broken to decrease the volume it would otherwise require.

3.3.35 Another suggestion for increasing the recycling effort was to pay milk vendors for providing a regular collection service for paper and glass. With this method, the vendors could enforce a refundable deposit scheme on bottles and drink cans.

3.3.36 The Committee viewed two videos from both Pacific Waste Management and Cleanaway on technology suitable for recyclables collection on a door-to-door basis. It includes a one-person collection vehicle with a low entry cabin and vehicle design to ensure easy operator loading and easy load disposal.

### **Subsidised Services**

3.3.37 Both Thiess and Waste Hawk noted that it would be unlikely that a weekly recycling service would be self funding from the sales of recyclables collected. A subsidy may need to be given to collectors. The cost of this subsidy could be offset by the savings from landfill space and disposal costs.

3.3.38 The Office of City Management believed that recycling subsidies, equivalent in value to the total cost of disposal, could be used to encourage the establishment of recycling industries.

3.3.39 The Committee accepts that the level of subsidy may need to vary as more materials are collected and to take account of fluctuating market prices. Discussions will have to be held with industry to determine the level of subsidy needed.

3.3.40 The Office of City Management notes that, although weekly collection services with usual garbage collection is the most successful way of achieving high recycling participation rates, it has been the experience of other councils elsewhere that weekly collections need to be subsidised, whereas monthly collections do not.

3.3.41 Canberra Paper and Cardboard have been told that APM in Sydney is lowering the price it will pay for delivered paper. Because of this, the company's door-to-door collection of low grade paper and cardboard makes that portion of the company's operation uneconomic.

3.3.42 Another submission suggested that not only should subsidies be paid to collectors of recyclables, but that they be provided to aid research and development into paper recycling plants.

3.3.43 It was impressed upon the Committee more than once, that it is useless collecting recyclables out of the waste stream if there was no market for them. One submission, however, stated that the long-term effect of recycling should be looked at more closely than any short-term losses associated with low commodity prices for recyclables. The prices of commodities are always fluctuating. As well, recycling operations should be looked at in terms of added value, or means of increasing the prices received for recyclables through better sorting and processing.

### **Cost of a Household Collection Service**

3.3.44 Weekly household collections of glass are common in Sydney with councils paying 6 cents per household each collection.

3.3.45 ACI have had discussions with the ACT on conducting a door-to-door collection of glass. ACI wish to trial 500 homes for 3 months. ACI asks that the ACT would pay for the recycling bags and the collection service, and ACI would promote the scheme.

3.3.46 Waste Hawk costed a weekly door-to-door recyclables collection service, assessed over a three year period. With assumptions on market prices for recyclables, and participation rates, such a system would require a subsidy of 10 cents per household per week. Paper, glass, PET, aluminium, oil and plastic would be collected. Cleanaway estimated \$3-10 per household per annum.

3.3.47 The cost would also depend on how the contract is negotiated. Revenue from the recyclables could reduce the cost of the service or, alternatively, the Government could collect the revenue directly from the sale of the recyclables and pay a flat rate for the collection service.

3.3.48 One waste management company believed that contracts for the collection of recyclables ought to be subject to the same performance standards as are garbage collection contracts. This includes public liability insurance and performance bonds.

3.3.49 It has been estimated that for every 1kg increase in collection of recyclables, there is a 0.5kg reduction in landfill needed.

3.3.50 In councils where costs of domestic waste disposal through a transfer station is \$35 per tonne, savings of hundreds of thousands of dollars are made with a weekly household collection of recyclables. For example North Sydney City Council by recycling 5 830 tonnes in 1988 from the domestic waste stream saved \$177 800 which more than offset the \$80 000 direct cost of the recycling program.

3.3.51 In its report on the impact of bins on waste management, the Australian Environment Council notes the trial by the Wyong Council of a fortnightly collection of recyclables. A different coloured bin was used for the collection of recyclables, in addition to a bin provided for usual garbage. A very high level of interest and participation was shown. Even though the trial was judged as a good initiative, the cost of promoting the recycling service could not be covered solely by the sale of recyclable materials.

3.3.52 It may be that the Government may see its role as supporting uneconomic recycling to a certain extent in order to encourage householders to care for their environment.

### **Use of Contractors**

3.3.53 The North Sydney City Council has a twice weekly collection and a weekly recycling collection system operated by two different contractors. It would prefer one contract to cover both collections.

3.3.54 Pacific Waste Management submit that it is unsatisfactory to have separate contractors occasionally collecting recyclables on a monthly or otherwise irregular basis – a comprehensive recycling scheme should be the responsibility of one waste management firm. They claim that this arrangement would work because private enterprise would be motivated to promote its service to achieve high household participation rates and therefore generate most income.

3.3.55 The collection of domestic waste from households is carried out by private contractors. The Committee does not see any good reason why the collection of recyclables from households ought not also be carried out by private contractors.

### **Research and Development**

3.3.56 The Office of City Management submitted that there ought to be some consideration of research and development work jointly carried out with industry on the methods of separation of mixed streams of recyclables from multi-material door-to-door collections.

3.3.57 Although not yet technically feasible, the Committee was impressed by the concept of a big bin divided by a partition into two sections, with one section for recyclables, the other for garbage. When collected with the automated lifting arm, the separate portions of the bin would be emptied into matching chutes on the garbage truck. The value of this collection system is that there would be less capital costs spent on trucks, and less energy expended on fuel (with one truck, not two, collecting from households).

3.3.58 In any case, the Committee believes that any contract for the collection of recyclables must be flexible enough to take into account future development of technology of collecting household wastes.

### **Mandatory Recycling Legislation**

3.3.59 Another submission claimed that 30 of the States in the USA have made recycling compulsory with penalties for non-compliance ranging from heavy fines to non-collection of garbage. Canadian authorities have adopted a 'carrot' rather than a 'stick' approach – in one Council householders' garbage bins are randomly selected and searched and \$1000 rewarded if it contains only non-recyclables.

3.3.60 Another submission suggested that recyclables should not be disposed through the big bin. Every big bin could be registered to a household, and those found with recyclables issued an infringement notice with penalties of about \$5.00. Non-payment of fines would attract increases in rates, and in extreme cases garbage collections from the household would be withdrawn.

3.3.61 It was also noted in one submission that mandatory domestic recycling has been introduced into some jurisdictions in Australia.

3.3.62 The Committee believes that there is sympathy for recycling and a positive attitude shown by the community for responsible waste management.

3.3.63 One submission claimed that people will begin to enjoy the challenge of sorting their own waste. Certainly the Committee believes that no recycling or comprehensive waste management strategy would be worth the effort if the community of Canberra did not feel part of it.

3.3.64 However the success of a recycling campaign depends, in part, on maximum participation by householders.

3.3.65 The Australian Environment Council advised that community cooperation with household collection may not come quickly. Perseverance is needed and monitoring of participation rates is important. The Committee does not believe that punishments or fines for non-compliance with recycling requirements are warranted.

### **3.3.66 The Committee recommends that:**

- . the ACT Government contract for a weekly door-to-door collection of recyclables, including glass, PET, aluminium, paper and cardboard**
- . householders be provided with appropriate containers to be used for the collection of recyclables**
- . the collection of recyclables be subsidised to ensure a well maintained service**
- . participation in household collection of recyclables be made mandatory if participation rates are not acceptable**
- . any contract for the collection of recyclables must be flexible enough to take into account future developments in technology**

### **Further Comments**

3.3.67 The Committee can only outline in this report its view on the best strategy it believes the Government can adopt to improve recycling. In deciding whether this option is feasible, the Committee accepts that it is necessary for the Government to cost the various means by which the strategy can be implemented. It is beyond the scope of this Committee to comprehensively cost each proposal.

3.3.68 It may be that it is far more economical to contract out the household collection of recyclables and leave it up to the contractor to sell the recyclables. Another option is that the Government pays the contractor only for collecting the recyclables and then takes over the responsibility of selling the recyclables. There are other options such as whether the contractor sorts the recyclables whilst on the run, or collects in bulk all recyclables and then sorts them out at a central sorting location.

3.3.69 The final contract on the collection of recyclables ought properly to be the decision of the Government, on the advice of its officers.

3.3.70 The Committee also believes that the contract for recyclables collection should be flexible enough to take into account the fluctuations of the markets for each recyclable.

## **3.4 Extension of Recycling Facilities**

### **Increase in Recycling Facilities**

3.4.1 It appeared that residents wish to increase the facilities and choices to recycle. Many who made submissions believed that people should be encouraged to make more use of neighbourhood recycling facilities for glass, metal, paper. One



submission called for an expansion of the waste oil collection service, suggesting that all service stations be required to accept waste oil. Yet another submission, happy with the household paper collection, wished to see a household collection service increased to include other recyclables such as glass.

3.4.2 It was also submitted that recycling centres should be redesigned to encourage greater public use, and handle a wider variety of materials.

3.4.3 To facilitate recycling and the collection of recyclables, one submission called for the Government to provide plastic recycling bins for collection. These bins could be placed on median strips and other convenient locations. A similar suggestion was that recycling bins should be introduced at all the shopping centres.

3.4.4 The Office of City Management agrees that static collection facilities are economical and efficient and could be extended to include more convenient locations. It also believed that there is a need for public education and publicity to improve recycling and use of recycling facilities.

**3.4.5 The Committee recommends that:**

- the location of recycling facilities in the ACT be better publicised**

**Recycling Facilities at Disposal Facilities**

3.4.6 The ACT Recycling Campaign submitted that the perceptions of tips as dumping grounds ought to be changed. The bulk of waste taken to tips should be recycled. Facilities should be available for the implementation of this ideal. Fees would then be charged to those who do not sort their garbage, but instead dump all waste onto the tip face. Those who deposited recyclables in allotted bins would not be charged.

3.4.7 The Commonwealth Department of the Arts, Sport, Environment, Tourism and Territories suggested that domestic visitors to landfill sites ought to be required to separate wastes such as car batteries, waste wood and appliances. It suggested that the ACT should encourage more trash and treasure markets and more second hand dealers to ensure articles are kept out of the waste stream.

3.4.8 It was also submitted to the Committee that there simply was not enough space at the current landfill sites to drop off recyclables. It was also claimed the recycling facilities are not actively integrated. Recycling facilities at the landfill sites should be staffed to ensure material is appropriately sorted.

3.4.9 Members of the Committee visited the Lucas Heights landfill site in Sydney. Owned by the Waste Management Authority, its operations had been contracted out. The members were impressed by the operations of the tip which was very clean and well kept as the facilities provided obviated the need for householders to enter the actual tip face. Generous recycling facilities for all recyclables were provided. Other garbage including organic rubbish being delivered, was tipped into a receiving bin down a chute and operated as a transfer station. Once the bins were full, trucks emptied them onto the tip face.

#### **3.4.10 The Committee recommends that:**

- **recycling facilities at both landfill sites and Ainslie transfer station be upgraded and access improved**
- **the design and siting of the facilities at the landfill sites be reconsidered to ensure the householder does not need to enter the tip face**

#### **Return Centres**

3.4.11 The Litter Research Association submitted that the ACT consider setting up a return centre. A return centre is in operation at Glenquarie in New South Wales – the Challenge Foundation buys the recyclables (glass, PET, aluminium) from the public and then resells them to Smorgon and Comalco. A good return centre requires easy access and parking, publicity, involvement of a local well-known charity, and payments for material returned.

#### **3.4.12 The LRA also suggest setting up:–**

- bottle banks in Canberra on which no return on containers is paid.
- weekend aluminium recycling moveable centres usually operated by service clubs as a means to generate income

3.4.13 It was suggested that buy back centres be staffed to keep them clean and tidy. It was again suggested that centres are more effective when a community group is running them, because of the loyalties shown to needy groups.

3.4.14 It is possible that door-to-door recyclables left out for collection might be pilfered for cashing in at the buy back centres.

3.4.15 The Office of City Management believes that such buy back centres seem very unlikely to be effective given that the ACT is so close to and Queanbeyan and surrounded by New South Wales. Already privately run buy back centres are operated in the ACT and Queanbeyan collecting aluminium.

### **3.5 Measures to Promote Recycling of Materials**

#### **Promoting Recycling of P.E.T.**

3.5.1 Although PET bottles comprise only 0.8% of the total mass of household waste, and other plastics 9.5%, they represent large volumes of waste which are often difficult to manage.

3.5.2 The Office of City Management notes that the per capita discards of plastic are increasing and attribute this to the replacement by plastics of other packaging materials such as glass and metal.

3.5.3 PET is the main plastic to be recycled in the ACT. It is manufactured by two firms in Australia – ACI Petalite and Smorgon Plastic. PET is used for soft drink containers because it is a lightweight plastic material. The bottles are easily recognisable because of their black plastic base while other PET bottles have a textured base.

3.5.4 PET containers cannot be reused as food containers because the material is porous and can be contaminated. Over time carbon dioxide used to aerate soft drinks, passes through the plastic. PET is recycled by paint manufacturers as an additive to paint. Its other uses include being shredded and used as filling for consumer items. PET has only recently been recovered as a recyclable material.

#### Volume of PET Collected

3.5.5 On estimates from ACI approximately 270 tonnes of PET are currently being sold in the ACT per year, of which 12–15 tonnes only are recycled every year (4.5%). Prices for PET fetch up to approximately \$700 tonne.

3.5.6 The PET bottle is quite large in volume compared to its low weight. This presents problems for economic transportation. ACI company proposes to bring a bale crusher to Canberra to decrease the problem of volume and high transport costs. ACI pay a transport subsidy of \$120 tonne.

3.5.7 The Committee recognises that a greater effort in recycling PET would result in reduced landfill costs as well as creating revenue.

#### **3.5.8 The Committee recommends that:**

- the ACT Government, in conjunction with PET manufacturers, increase consumer awareness of the capacity for PET to be recycled**

#### **Promoting Recycling of Other Plastics**

3.5.9 In the USA, because of concern at the increasing volumes of garbage and lack of sites for landfill, legislation is being used to reverse the trend to a throw-away society. Examples of this include taxes on plastic packaging and degradability requirements. In one State, plastic products such as polystyrene foam used for fast food packaging are banned.

3.5.10 Fear of repressive legislation which would economically affect the plastics industry, has prompted plastic producers to find recycling solutions.

3.5.11 In Australia, Smorgon Plastic have set up a pilot plastic recycling plant in Victoria which the Committee took the opportunity to visit. Plastic waste is bought by the company at 15 cents per kg (delivered) after which it is sorted into gross categories of soft, hard and PET. This enables the producers to ensure uniformity of the end product, Syntal.

3.5.12 The recycling process uses contaminated plastics (with labels and caps) which means no cleaning of the incoming material is required. The process is very basic in that the requirements for production are minimal. The technique does not require sorting of plastics (gross sorting only is carried out) thus all plastics can be included in the process.

3.5.13 The mixed plastics are heated under pressure and extruded into a cold water bath from a particular size diameter ranging from 2.5cm to 12.5cm. Lengths of the product vary from 1 metre to 3.8 metres. The product is commonly used as a wood substitute and used for such things as:-

- . road posts and signs
- . fencing
- . floor slats
- . garden furniture
- . kindergarten furniture and playground equipment

3.5.14 The finished product, Syntal, can be treated much like wood – sawn, nailed, planed and screwed. It is impervious to chemical and bacterial attack and is rot and weather proof, being maintenance free. Smorgon claim it can be used in contact with salt water and aggressive chemicals where wood would have a short life.

3.5.15 Smorgon claim that Australia will produce more than 1 million tonnes of plastic per year, of which 200,000 tonnes is used for packaging and 70% in short life disposable products.

3.5.16 Although one extruder machine plant is capable of producing approximately 900 tonnes a year, it is a small percentage of all the plastic in the waste stream. For example, it represents 25% of all the plastics in the collected domestic waste stream. It costs approximately \$1.5 million to set up the whole plant.

3.5.17 The publicity surrounding the plastics recycling plant has raised residents' expectations of plastics recycling generally in Victoria. Councils are finding themselves under increasing pressure to collect and recycle plastics.

3.5.18 Brickwood Holdings Pty Ltd, in conjunction with Commercial Polymers Pty Ltd, submitted that the plastic used to manufacture the 2 litre milk containers could be recycled into similar products produced by Smorgon Plastic. They noted the development of a "reverse vending" machine which will be trialled on the Gold Coast. Consumers place their empty plastic containers in a large box. They are then automatically crushed to reduce volume ready for collection. The box counts the number of containers inserted and issues a receipt. It can reject glass, and collect other plastics such as PET. It is planned that a plastic recycling plant will be built on the Gold Coast.

### Markets for Plastic Recycled Products

3.5.19 One submission suggested that facilities for the collection of plastics be established at existing recycling facilities and that the ACT Government negotiate markets for recycled plastics.

3.5.20 Smorgon Plastic is especially seeking to market the Syntal product to local councils. With councils selling it to Smorgon at \$15 tonne, Smorgon sells the finished product back to councils for \$1200 – \$1400 tonne. The price for the end product is twice the price for treated pine, but compares favourably with most hardwoods and is cheaper than concrete or steel.

3.5.21 One machine is capable of producing 900 tonnes per annum which is about 8% of the total plastics in the ACT's waste stream and almost a quarter of the collected domestic waste stream.

3.5.22 There is a possibility of a plant being established in Canberra given commercial interest. However a plant by itself would not entirely solve the plastics problem. Markets for the finished product also need to be ensured.

3.5.23 Several areas of the ACT Administration met in 1989 to discuss the uses of Syntal. It is proposed to trial the product on street furniture.

#### **3.5.24 The Committee recommends that:**

- **the ACT Government, in conjunction with industry and industry associations, investigate the possibility of establishing a plastics recycling plant in Canberra**

### Bio-Degradable Plastic

3.5.25 One type of biodegradable plastic which has been trialled in Australia is the photodegradable plastic shopping bags. They were introduced by two chain stores in Victoria in July 1989. The carry bags are designed to disintegrate after exposure to the sunlight after 60–90 days. Cut Price Delis estimate that 14 million plastic carry bags or 35,000 kg of plastics are used in their stores each year.

3.5.26 Promoted as environmentally friendly, there has been concern expressed about their use. The Victorian Minister for Planning and the Environment requested that the bags not be used until the Environmental Protection Authority carried out an environmental assessment. Some of the concerns include:—

- that the chemicals triggering the degrading process are often heavy metals which remain in the soil
- the probability of the carry bags being exposed to 60 days of sunlight is slim given that after dumping at the tip, they are covered by landfill

- their use does not attack one of the fundamental goals in a waste management regime, waste minimisation
- the use of the degradable plastic in recycled plastic products such as Syntal produced by Smorgon could create an unstable product especially if the photodegradable plastic is situated on the surface of the wood product, exposed to sunlight

### **3.5.27 The Committee recommends that:**

- **biodegradable plastic shopping bags be banned from use in the ACT until such time as it is proven that they are environmentally sound**

### Limiting Plastics Types

3.5.28 There are currently hundreds of plastics on the market some of which, like PET, can be recycled and others, such as biodegradable plastic bags, are impossible to recycle. It was explained by Smorgon that it was necessary to have some idea of the type of plastics returned to the plant so that plastics could be adequately mixed to ensure an homogeneous product.

3.5.29 To this end and for other reasons, it has been suggested to the Committee that plastics for containers be limited to two – PET and polyethylene. This would also greatly assist in the recycling streams. Plastic producers in USA have launched a numbered coding system for plastic containers to make sorting of plastics and recycling easier. One submission noted that already a numbering system for plastics was being used in Australia.

3.5.30 Given, however, that Smorgon has developed a process for recycling all mixed plastics, this suggestion does not have a high priority although the Committee views it with some favour.

### **3.5.31 The Committee recommends that:**

- **the ACT Government discuss with the other State, Northern Territory and Commonwealth Governments, and private industry, the possibility of limiting plastics used in food and beverage containers to those types which are more readily recyclable**

### **Promoting Glass Recycling**

3.5.32 Up to 95% of cullet can be used as raw material in the manufacture of glass, thus making the manufacturing process easier. Recently, glass producers have been manufacturing 'one-way' containers. Refillable containers have been phased out.

3.5.33 12 000 tonnes of glass are sold to the ACT every year, of which householders discard approximately 5 032 tonnes (13.6% of the waste stream). In 1988, 1,230 tonnes of glass were collected for recycling.

3.5.34 The Office of City Management has submitted that recycling of glass can be improved by:—

- . advertising
- . increasing the number of glass collection points at convenient locations
- . trialling door-to-door collection of glass to determine economic viability and public acceptance

3.5.35 It was noted in one submission that according to research done in Victoria, the existence of static recycling collection centres and bottle banks could undermine a focus on door-to-door collection of recyclables. On the other hand the Office of City Management asserts that drop off depots are used not only by householders but by commercial businesses for recycling purposes. A multi-material door-to-door collection system may alter usage patterns of these centres but may not eliminate the need for them. The Office of City Management submits that trials of various collection options are necessary to determine the balance of economic recycling.

3.5.36 There is always a ready market for glass and, because of its widespread use in beverage containers, it is the main focus of issues such as container deposit legislation. This will be discussed separately in Chapter 8.

3.5.37 It would not be feasible to build a glass processing plant in the ACT because of the low volume of glass that would be recycled and high capital costs involved.

**3.5.38 The Committee recommends that:**

- . **the ACT Government not introduce additional glass banks until after assessing the success of the door-to-door collection of recyclables**

### **Promoting Aluminium Recycling**

3.5.39 Comalco note that approximately 56% of all aluminium cans sold in Australia were returned for recycling in 1988 for which \$85 million was paid to collectors (commercial agents and self help groups) for the return of the cans.

3.5.40 Comalco claim that only 5% of the energy required to produce aluminium metal from raw bauxite is needed to recycle used metal. Firms such as Comalco have put resources into setting up buy back centres, sponsoring can recycling programs in schools, advertising and promotional activities.

3.5.41 Aluminium has a ready buy back market, but the price can vary. In February 1990 Comalco, one of Australia's largest manufacturers of aluminium cans, announced it would drop the price paid for cans by one-third due to falling world

prices.

3.5.42 The Metropolitan Waste Disposal Authority (NSW) estimated that, by weight, aluminium cans made up 0.34% of the total waste volume. The figure for Canberra is higher than this. Through a survey of Canberra's domestic waste, it was found that 1% of the waste stream was aluminium (including cans) representing 370 tonnes of aluminium per year. It is estimated that 236 tonnes of aluminium cans are recycled per year.

3.5.43 In addition 280 tonnes of other types of aluminium household goods are recycled through privately run 'buy back' centres.

3.5.44 There are no costs to the ACT Government for these recycling campaigns.

3.5.45 Privately owned buy back centres could be more widely advertised. Recycling of both metal and aluminium would be improved through promotion.

3.5.46 The Committee believes that recycling of aluminium could be improved and expect that, with the introduction of door-to-door recyclables collection, this will be achieved.

### **Promoting Recycling of Ferrous Material**

3.5.47 The last Government contract for the collection of dumped car bodies and white goods has been the subject of much publicity. The contract was intended to ensure that dumped car bodies and white goods are collected and disposed.

3.5.48 Metal Recyclers (NSW) held a contract which expired in 1988. It provided for the payment by the ACT Government to the contractor of \$14.50 tonne for the removal of scrap metal from the Government metal recycling yard at Fyshwick. During the final year of the contract, rather than the contract being extended, early in 1988 new tenders were called, as provided for in the contract. It was considered no longer necessary to subsidise the cost of disposing of unwanted car bodies given the increase in the world price of steel.

3.5.49 The new contract was awarded and finalised in October 1988 to Wanless, on the basis that Wanless pay the ACT the sum of approximately \$62 000.

3.5.50 As part of the tender, the government-owned site at Newcastle Street Fyshwick, was made available for use. This was taken up by Wanless.

3.5.51 The Committee was advised that until October 1989, Wanless had been adhering to the contractual obligations, although there was some question whether this was so. However on 20 October 1989, Wanless advised that their assets and trading name had been acquired by Simsmetal Ltd. and that Simsmetal had no interest in continuing with the contract. At that time, Wanless provided the required four months' formal notice of their intention to terminate the contract.

3.5.52 The Committee notes that the ACT Government formally closed the metal recycling yard at Fyshwick on 28 February 1990 and provided new sites at the Mugga Lane and Belconnen landfill sites for the disposal of metal wastes. The sites started operation on 1 March 1990.



3.5.53 The Committee commends this policy and would have recommended the same decision be taken. This is not now necessary.

### **Promoting Oil Recycling**

3.5.54 The Office of City Management estimates that 2 500 000 litres of oil is used each year in Canberra, of which 50% is burned up during use. The ACT Government uses 170, 000 litres of oil per year. Given that the total quantity of oil which is recycled is 816 000 litres, the recycling rate is estimated to be approximately 75%. Of the recycled oil, approximately 76% comes from commercial sources, and 24% from government sources (ignoring the waste oil generated by households).

3.5.55 The Committee took the opportunity to inspect oil recycling facilities of the Independent Oil Refineries whilst in Sydney.

3.5.56 The Office of City Management has submitted that oil recycling could be improved by persuading the oil companies to accept responsibility for the return of used oil.

3.5.57 The use of recycling facilities could also be encouraged through guaranteed purchase by the ACT Government of recycled oil. This option is currently being examined. Already a list of quantities and grades of oil required has been sent to the recycling company, Trifoleum Pty Ltd. The Committee accepts the notion that prices will determine the viability of using recycled oil on a regular basis.

3.5.58 Participation in public education campaigns to promote recycling is vital. The existing network of participating service stations in collecting waste oil needs to be extended.

### **3.5.59 The Committee recommends that:**

- . the existence of oil recycling facilities be more widely advertised**
- . the ACT Government investigate the possibility of establishing oil collection points at the Ainslie transfer station, the new Tuggeranong recycling centre and the Belconnen and Phillip recycling centres**
- . the ACT Government in conjunction with the Motor Traders Association and service stations, extend and promote waste oil collection facilities in service stations**

## **Paper and Cardboard Recycling Measures**

3.5.60 The Office of City Management estimates that of the household waste, paper comprises almost 20% of which 12.9% (4 773 tonnes) could potentially be recycled.

3.5.61 Canberra Paper and Cardboard sells the paper they collect to Australian Paper Mills in Sydney which has guaranteed to take all paper from this contract.

3.5.62 S & E Recycling ask that the Committee be aware of private enterprise already established in the ACT, and successfully operating as recyclers.

### **Quality and Markets for Waste Paper**

3.5.63 It is claimed that there are ready markets for high quality paper waste such as computer paper. The paper collected from office blocks is of a much higher quality than household paper and consequently commands a much higher price. Paper collected from households is mostly cardboard and low grade paper.

3.5.64 Canberra Paper and Cardboard noted that there are limits to the volumes of waste paper that can be used by the paper mills. This depends on the demand for paper products, the quality of paper delivered for recycling and the costs of the landed product at the mill. They warn that a satisfactory market for the product must exist before effort is put into recycling.

3.5.65 This is evident from APM's recent notice that it intends to drop the price paid for all types of paper.

### **Paper Processing Plant in the ACT**

3.5.66 There is no paper re-processing or pulpmaking plant in the ACT.

3.5.67 Some submissions also call for the possibility of setting up a recycling plant in the ACT to produce recycled paper. Thiess and Waste Hawk suggested that any recycling and processing facilities in Canberra ought to be licensed to allow enough volume to be processed. This would allow the individual contractors to expend money on capital and equipment because the market would be guaranteed.

3.5.68 The Committee was advised by APM that a minimum of 40 000 tonnes per annum of waste paper is needed to sustain the smallest of paper re-processing plants. Currently 14 000 tonnes of paper are recycled every year in the ACT.

3.5.69 The Committee heard evidence from Blohm and Voss of a new Organocell pulpmaking process. The plant does not use recycled paper and can produce paper in a much less harmful way because it operates free from sulphur and does not create effluents. The system is completely closed, organic solvents are recovered and reused, and all effluent is recycled. The only emission is water. Leaves, branches and dead or burnt trees could be used with a 95% production rate. The production capacity of their test plant in Germany is 120,000 tonnes of pulp paper per year.

3.5.70 Whether paper products are made interstate or in the ACT, transport costs still have to be added to the costs of production.

3.5.71 The Committee considers that it would not be economical for the Government to set up a paper reprocessing plant in the ACT.

### Taxes on Recycled Paper

3.5.72 A popular misconception held by many people is that the bulk of recycled paper is office writing paper. This is not the case. It comprises a very small portion of the market for recycled paper products. The biggest market for recycled paper is the packaging and industrial market. APM estimate that 75% of the paper products used by these markets are made from waste paper. Up to 40% newsprint and 60% cardboard can be used in the manufacture of recycled paper.

3.5.73 Recycled office paper products such as Re-write, is much more expensive to purchase than non-recycled writing paper (made from virgin wood pulp). However the cost may decrease with the Federal Government's legislation exempting from wholesale tax certain paper products which are made from 100 per cent recycled paper, including printing and writing paper, tissue and toilet paper and paper bags.

3.5.74 If the sales tax was removed from cardboard cartons containing recycled paper, this could give the paper recycling industry a significant boost. It was brought to the attention of the Committee that if paper mills recycled all of the newsprint they produced, there would be no paper glut and the paper industry would not need a boost.

3.5.75 One submission believed that taxes should work the other way – discriminatory taxes ought to be introduced to promote the use of recycled paper products.

### Newsprint

3.5.76 Australia uses 600 000 tonnes of newsprint per year. Two-thirds of this is manufactured in Australia. Because there are no import tariffs on newspaper, unlike other grades of paper, the market for newsprint is a more worldwide one.

3.5.77 Recycling of waste newsprint involves a de-inking process which requires solvents and chemicals. Currently none of the newsprint manufactured in Australia is made of recycled paper. Indonesia is the nearest country which recycles newsprint.

3.5.78 However in February 1990, Australian Newspaper Mills (ANM) announced that it had approved \$4 million for the preparation of an Environmental Impact Statement into the construction of Australia's first newspaper recycling plant.

3.5.79 The site of the plant is yet to be decided with Sydney, Albury, Melbourne and Boyer (Tasmania) being the competing locations. The aim is that the plant will be operational by the end of 1992 and will recycle 130 000 tonnes of newsprint per annum. Newsprint will be mixed with virgin wood pulp. Capital costs of the project are estimated at \$100 million.

3.5.80 In principle, the Committee wholeheartedly supports the project.

3.5.81 Other uses for newsprint include home insulation, which apparently is the practice in some other countries. Paper is mixed with 10% borax and 10% boric acid.

3.5.82 Newsprint for recycling in Australia may need to be separated from other paper wastes.

3.5.83 It was submitted that the Waste Management Resources Advisory Committee of the Australia New Zealand Environment Council is currently considering the benefits and costs of a mandatory standard that newsprint contain a certain amount of recycled newsprint.

**3.5.84 The Committee recommends that:**

- . **the ACT Government negotiate with the other State, Northern Territory and Commonwealth Governments on the possibility of introducing mandatory requirements that newspapers contain a certain percentage of recycled newsprint**

Government Departments

3.5.85 The Commonwealth Minister for Administrative Services gave information to the Committee about his Department's review on recycled paper. The review investigated the possible uses for recycled paper and measures of procurement. Some of the recommendations are below:

- . work areas separate paper into high and low quality
- . Commonwealth office cleaning contracts to include removal of paper wastes and ensure that clean paper wastes are supplied to the paper industry for recycling
- . paper recycling requirements be taken into account when designing Commonwealth buildings

3.5.86 The review highlighted the need for adequate education for all staff and the need to secure markets for all grades of paper. The report also made recommendations on applications for recycled paper, noting that this depended on the end-use of the paper, its performance, availability and price.

3.5.87 The uses suitable for 100% recycled paper include note pads, throwaways, documents not required for evidence or proof, daily lists of parliamentary bills, information leaflets etc. Applications for which 100% recycled paper may not be used include photocopying, laser and high speed printing, where brightness or purity of colour is needed, paper records which need to be kept for many years, and paper records which are used frequently and which need to be strong and durable.

3.5.88 The review noted that opportunities can be created to extend the use of recycled paper with manufacturers improving quality where a market demand exists.

3.5.89 The review also noted the need to develop a standard for Australian paper products. This is being pursued through the Standards Association of Australia.

3.5.90 The ACT Government is using recycled paper on an ad-hoc basis. Office paper collection services have commenced on an ad-hoc basis in some ACT Government offices. Clearly marked bins have been provided by Canberra Paper and Cardboard Recycling Co.

3.5.91 The cleaning contracts for ACT Government offices is controlled through the Department of Administrative Services contract. Through the recent Department's review on recycled paper, the ACT Government is negotiating to have collection of office paper form part of the cleaning contracts.

3.5.92 Overall standardisation of use of recycled paper throughout the ACT Government is being investigated. Discussions are being held with the Department of Administrative Services on the possibility of taking advantage of volume discounts in the purchase of recycled paper through that Department's contracts. The price of recycled paper is of concern, with quotes 20% above the price of other paper. The ACT Government is awaiting the establishment of an Australian Standard for recycled paper.

**3.5.93 The Committee recommends that:**

- . wherever possible the ACT Government take steps to introduce paper recycling measures into all of its offices**
- . the ACT Government educate its own employees about paper recycling**

**Shredding of Classified Material from Government Departments**

3.5.94 Under Commonwealth Government arrangements, the Attorney-General's Department stipulates standards by which classified material (including paper, computer paper, film etc) is destroyed by government officers to ensure that the information cannot in any way be retrieved. Classified material is packaged and sealed by the officer or Department and sent to the Russell incinerator for destruction.

3.5.95 Some departments contract out the disposal of sensitive documents – some paper companies carry out the shredding or pick up pre-shredded material.

3.5.96 The Committee was told that recycling of paper is impossible when shredding is done so finely that the paper turns to dust. Recycling depends on the paper fibre being of a particular length.

3.5.97 The Committee was told by Brambles Records Management that there is an estimated 100 tonnes per week of classified material in the ACT being destroyed in this way. They have suggested that a purpose-built secure processing plant be established to ensure that classified waste is not shredded to dust and can be sorted and used for recycled.

**3.5.98 The Committee recommends that:**

- **the ACT Government review its policy on shredding and disposal of sensitive documents in collaboration with the Commonwealth Government with the aim of maximising the recycling potential of its waste office paper**

**Measures to Recycle Tyres**

3.5.99 Tyres are not recycled in the ACT, they are only stored at the Belconnen tip in a special area.

3.5.100 Currently any recycling initiatives are limited and expensive. One submission believed that a study ought to be undertaken on further uses for the tyres by the Canberra Development Board.

3.5.101 Blohm and Voss described a process by which tyres are recycled. The tyres are milled, producing a granulate which can be used for a wide range of products for various applications. The tyres are refrigerated to minus 50–60 °C with liquid nitrogen. The textile lining and wire of the tyre is separated through crushing. The rubber is then chemically and mechanically treated to produce granulate. 30% of the recycled granulate can be used in the manufacture of new rubber tyres. Its other uses include floor tiles, sports floor coverings and road building.

3.5.102 The Committee believes that, in the short term, recycling of tyres is not a high priority.

**3.5.103 The Committee recommends that:**

- **a special area at the Mugga Lane landfill area be put aside for the disposal of tyres**
- **an appropriate fee be charged for the disposal of the tyres**

**Promoting Composting**

3.5.104 In other councils in Australia when big bins were introduced, backyard burning was banned. Thus householders had nowhere to put prunings and garden clippings except into the big bin. This increase in volume has added to the premium of landfill.

3.5.105 The former members of the Committee visited the Ku-ring-gai Council in Sydney and viewed the kerbside domestic collection of big bins. Much of the rubbish was leaves and garden clippings.

3.5.106 Considerable time is involved in composting hence long leases are necessary to stockpile recycled products. The long lease granted to Corkhill Bros recognised the time taken and the capital equipment required to undertake the business. When it started in 1980, it was the first time composting had been tried commercially in the ACT. Over \$1 million has been spent on upgrading, modifying and purchasing equipment. The end product is available for use in gardens and pots.

3.5.107 A five stage operation is used –

- . collection of waste
- . separation of unwanted material such as glass, metal, rocks etc
- . shredding
- . turning and mixing in additives such as sawdust, manure etc
- . packaging and sale of the finished product

3.5.108 The process takes between 6–9 months. Excavation material is also recycled at the site also for use as a second grade building fill. The Committee was told that the operation of Corkhills has taken both time and money to get into full production mode.

3.5.109 Corkhills claim that through composting it has prolonged the life of the tip, and relieved the Administration of disposing of wet chicken manure. It is estimated that 1 500 tonnes of household garden waste are delivered privately by householders to Corkhills annually. The siting of Corkhill's facility, the Committee was told, was important in encouraging householders to dispose of their organic waste this way.

3.5.110 Backyard composting has the potential to substantially increase savings through a decreased demand for landfill. Even greater savings would be made if much of the organic waste householders deliver to the tips could be recycled. When properly conducted, composting does not emit methane.

3.5.111 However United Scientists for Environment Protection noted in their submission that not every household would have the inclination, the space or the time to spend on composting. Besides, some household organic material such as woody garden waste and bones, is not suitable for composting.

3.5.112 Many submissions called for more publicity to encourage householders to compost. This would result in fewer demands on the tips. Some Sydney councils encourage and inform householders on how to compost.

3.5.113 However, promotion of home composting could have a detrimental effect on the 'trashpak' service operators whose source of income is dependent on householders not willing or able to dispose of their garden and organic waste through the tip or composting.

3.5.114 More use be made of the current services offered by the private sector for the removal of organic wastes. The possibility of providing compost bins to each householder was considered. The Department of Arts, Sport, Environment, Tourism and Territories submitted that given that the infrastructure for the collection of waste already exists, there could be an advantage in having an increased central collection of domestic organic waste. However, the cost of either providing a compost bin or collecting organic wastes could outweigh the costs of landfill.

3.5.115 Alternatively, more use could be made of Corkhill Bros. composting arrangement at Mugga Lane landfill site. A similar facility might be established at the West Belconnen landfill site. The Trades and Labour Council recommend a commercial composting system at each tip.

**3.5.116 The Committee recommends that**

- . **the ACT Government in conjunction with Corkhill Bros, better publicise the existing composting facility at Mugga Lane**
- . **the ACT Government inform the community on how to compost and measures to minimise organic waste going to landfill**
- . **the ACT Government call for expressions of interest for the collection or setting up of a compost plant on or near the West Belconnen landfill area**
- . **the ACT Government investigate the possibility of a special collection bin at the Ainslie transfer station for organic wastes which can be transferred to composting facilities at landfill**
- . **the ACT Government set aside an area at the Tuggeranong recycling centre for the collection of organic material**

**3.6 Markets for Recyclables and Government Buying Power**

3.6.1 Where there are no recycling facilities available, recyclable material is landfilled. Whilst it is important to ensure that households do have access to proper facilities, it would be more cost-effective to landfill recyclables where there are economic markets for their use. This sentiment was also expressed by the Australian Environment Council in 1987. It asserted that councils should be willing to negotiate and bargain with buyers of material to achieve reasonable prices and stable markets.

3.6.2 It was submitted to the Committee that if the ACT was committed to promoting recycling, it ought to promote the end products and help create markets for recyclables where there are limited opportunities. The Office of City Management suggested that when the government enters into contracts for the collection of recyclables, it should also ensure a market for their use.