



**Waste Management
Strategy 2005-09**

Cardinia Shire Council

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Executive summary and recommendations

The Waste Management Strategy has been prepared to review current waste management arrangements within the Shire in accordance with the South Eastern Regional Waste Management Group's (SERWMG) plan and recognised industry standards.

The State Government's Towards Zero Waste strategy and SERWMG adopted targets are:

45% resource recovery by 2009

65% resource recovery by 2014

10% reduction in total waste by 2014

The Aims of this Strategy Review are to:

- *Review the implementation of the recommendations of the 2001 strategy.*
- *To consider options for hard and green waste collections*
- *Update the current status of the Bayles and Nar Nar Goon landfills, and the Twigg Transfer Station.*
- *Identify recycling and waste minimisation strategies*
- *Review domestic services in remote areas.*
- *Future trends or influences.*
- *Review litter management*

Current situation

Garbage collection

- *Weekly kerbside collection of refuse is provided to all residential properties and disposed of at the Sita regional landfill site in Hallam.*

Recycling

- *Fortnightly kerbside recycling collection is provided and recyclables conveyed to the Materials Recovery Facility in Wedgewood Dr. Hallam for sorting.*

Hard and green waste

- *A hard and green waste service operates on alternating months.*
- *Hard Waste is taken directly to the Sita landfill, either in Lyndhurst or Hallam.*
- *Green Waste is taken to Dandenong for processing.*

Nappy recycling

- *A fortnightly kerbside collection and recycling service for single-use nappies is provided by My Planet Recycling (SGS) and commenced in September 2004. This is a privately run service, however Council pays the contractor what it would have cost to send the material to landfill.*

Landfills and transfer station

- *The Pakenham Transfer Station, owned by Twigg and operated by Outlook Environmental (previously known as Minibah), is available to all residents and non-residents at a fee/m³.*
- *The Shire resumed control and operation of the unlicensed landfill at Bayles in 2004 and reduced the opening hours to Friday and Saturday only. Bayles landfill has essentially reached capacity and needs to be closed to the public.*
- *The old council owned Nar Nar Goon landfill which was closed on the 30th of June 2001 has undergone rehabilitation works and has twice yearly monitoring of groundwater bores and landfill gas. The results of the monitoring are reported to the EPA.*

Recommendations

Green and hard waste collection

That Council investigate the demand for a Green and Hard Waste collection service consisting of:

- *Fortnightly 240lt bin based green waste collection service for the residential areas of the municipality for which a separate fee is charged and;*

That Council renegotiate a twelve month contract extension for the book-in service which allows for the option of

- *Continuation of the monthly alternating hard and green waste service or;*
- *Annual shire wide collection of bundled green waste and;*
- *Annual shire wide collection of hard waste.*

That Council call for tenders for receipt and processing of green waste.

Landfill sites

That Council

- *Within three months, cease public access to Bayles landfill, but continue to use it as a soil stockpile site. Remediation of the site would be on-going with some of the stockpile material being used for this.*
- *Prepare a strategy for the future use of the old Nar Nar Goon landfill.*

Waste minimisation

In order to achieve a significant reduction of waste to landfill, it is recommended that the Cardinia Shire Council adopt the following strategy:

- *Provide assistance to schools to run programs on waste minimisation and recycling.*
- *Continue the bin monitoring program to improve recycling practices to ensure less contamination of recyclables and a reduction in the amount of recyclables diverted to landfill.*
- *encourage development of markets for recycled products including; crushed concrete, repaired hard waste products, recycled green waste and compost products, recycled paper products etc.;*
- *Establish “public place” recycling trials for areas such as local shopping centres and main streets and continue providing recycling facilities at festivals and sporting events etc.;*

- *In line with Council's Eco-Buy Policy, ensure that the Shire actively participates in waste minimisation and recycling practices;*
- *Encouraging local businesses and industries to take part in the kerbside recycling program by supplying recycling bins at cost;*
- *investigate the opportunities for recycling and re-using building materials such as bricks, concrete etc. and minimise demolition and construction wastes currently going to landfill;*
- *promoting alternative practices to the disposal of soiled nappies e.g. nappy recycling, cloth nappies to be washed at home, a nappy wash service;*
- *encouraging the community to reduce waste generated, to buy reduced packaged items, to avoid 'throw away' products and refuse unnecessary packaging (plastic bags) etc.*

Litter control

- *Look at establishing a Litter Prevention Task Force and Litter Strategy to address the way litter problems are addressed and identify any gaps in service levels.*

Introduction

Cardinia is an aggregation of more than 30 different communities spread across 1,280 square kilometres stretching from the foothills of the Dandenong ranges in the north to the shores of Western Port in the south and from Beaconsfield in the west to Bunyip in the east.

Cardinia is one of Victoria’s nine interface councils that combine both rural and urban areas. The population in June 2003 was 51,000 and is expected to grow to 67,500 in June 2008. It is anticipated that by June 2017 the population growth will reach 100,000 people. The majority of this population growth will reside in the growth corridor, which accounts for less than 5 per cent of the geographic area of the Shire. Cardinia is the seventh fastest growing LGA (6.5%) in Australia (ABS 2003-04).

Population forecast

The current population is estimated to be 52,000. Growth projections are shown below. The majority of this growth is to occur between Beaconsfield and Pakenham with limited growth in rural areas of the municipality.

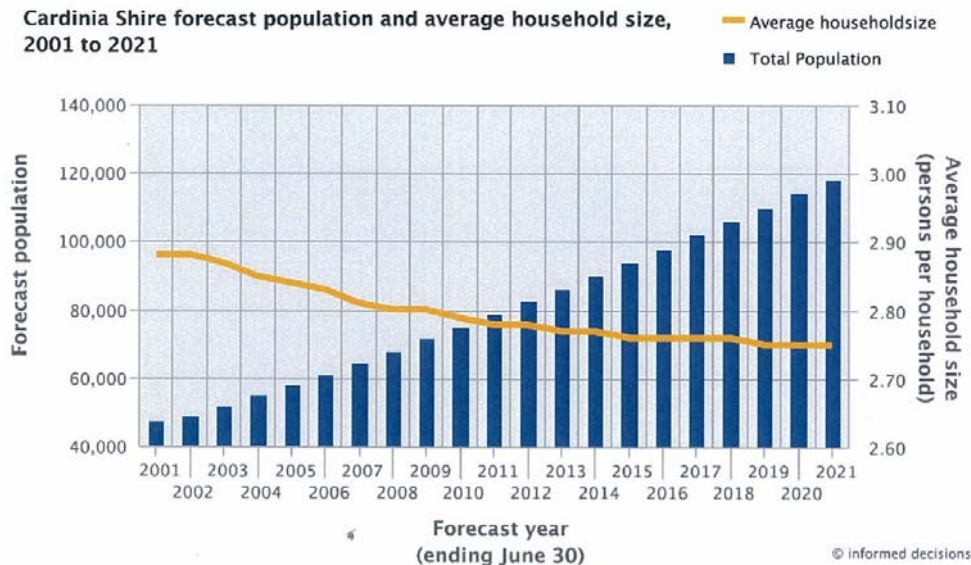
How many will live here in the future?

Summary data	Forecast year				
	2001	2006	2011	2016	2021
Total population	47,010	↗60,738	↗78,518	↗97,802	↗117,926
Households	16,082	↗21,260	↗27,934	↗35,095	↗42,510
Dwellings	16,714	↗22,100	↗29,013	↗36,418	↗44,073
Average household size	2.88	↘2.83	↘2.78	↘2.76	↘2.75

↔ stable* from previous year ↗ increase from previous year ↘ decrease from previous year

* stable refers to between +/- 0.5% change

Cardinia Shire forecast population and average household size, 2001 to 2021



This strategy and the Council Plan

This Strategy reflects the Cardinia Shire's Vision and Mission as set down in the Council Plan 2004–2007.

Mission

Cardinia Shire will facilitate its vision through strong advocacy, timely provision of infrastructure and services by a responsive Council and its skilled organisation.

Goals

As far as practical, eliminate all waste to landfill.

Reduce the total volume of material collected. This is achieved by programs promoting less packaging, less waste generation, home composting and mulching.

Background

PPK Environment & Infrastructure Pty Ltd (PPK) was commissioned in 1998 by Cardinia Shire Council (Shire) to undertake a Waste Management Strategy. Part of the study was to assess the Shire's waste minimisation and recycling performance.

The Shire had a policy to reduce the amount of waste to landfill by 50% by the year 2000. This policy was similar to the State Government Guidelines for waste minimisation. Implementation of Cardinia Shire Council's Waste Management Strategy was to be a significant step towards achieving these goals.

The Waste Management Strategy was developed for a ten year period and was consistent with the South Eastern Regional Waste Management Plan. The strategy was to perform the following:

- identify the current waste management arrangements;
- assess existing waste facilities;
- identify recycling and waste minimisation strategies, and
- assess economic considerations.

A program of community consultation was conducted as part of the Waste Management Strategy. Workshops were conducted with community representatives to obtain a clear understanding of perceptions about various issues relating to waste management.

In April 2001 Newton Wayman Choog & Associates conducted a further survey of Council residents and the results of their survey were used where relevant in an update of the Strategy.

In late 2001 a review of the Strategy was undertaken and reported to Council on 17 December. A public exhibition process followed and on 18 February 2002, the revised Strategy was adopted.

The major recommendations adopted were

- **to introduce a two bin garbage and recycling system and;**
- **to have monthly hard and green waste collections.**

Aim

The aims of this Strategy Review are:

- Review the implementation of the recommendations of the 2001;
- To consider options for the hard and green waste collection;
- Update the current status of the Bayles and Nar Nar Goon Landfills and the Twigg Transfer Station;
- Identify recycling and waste minimisation strategies;
- Review domestic service in remote areas;
- Future trends and influences;
- Review litter management.

The South Eastern Regional Waste Management Group (SERWMG)

Cardinia is a member of the SERWMG whose aim is to co-ordinate waste management throughout the south eastern region. The region is required to produce a plan which identifies the issues and sets strategies. Individual council plans must be in accordance with the strategies of the region plan which takes into account government policy and direction.

These are

45% resource recovery by 2009

65% resource recovery by 2014

10% reduction in total waste by 2014

The Towards Zero Waste working party

The Towards Zero Waste Working Party was established in November 2004 on the direction of the Minister for Environment, John Thwaites. The aim was to develop an agreed implementation approach for the *Towards Zero Waste* strategy in metropolitan Melbourne and to focus on

implementation responsibilities, as well as efficient and effective metropolitan planning and delivery arrangements.

The working party comprised State agencies (DSE, EPA EcoRecycle), metropolitan councils (a council CEO from each waste management region), the Municipal Association of Victoria, the Victorian Local Governance Association and Regional Waste Management Groups.

The Working Party recommends that a single metropolitan body would provide an optimal balance between economy of scale, delivery of *Towards Zero Waste* and engagement of local government stakeholders.

The progressive sophistication of waste management technology, as illustrated by the transition of landfill from simple dumps to specially designed and engineered operations, needs to be matched with strengthened regional capacity and enhanced buying power.

The potential to harness the buying power of the 30 metropolitan councils would ensure that a metropolitan regional body is able to effectively engage with the private sector to deliver the best outcomes for emerging technologies, in addition to currently available technologies.

The key elements of the Preferred Option are:

- **The creation of a single Metropolitan Waste Management Group (MWMG) under the Environment Protection Act, responsible for co-ordinating and facilitating the delivery of Municipal Solid Waste aspects of *Towards Zero Waste* in metropolitan Melbourne.**
- **The new Metropolitan Waste Management Group (MWMG), would be formed from amalgamation of the existing 4 Metropolitan RWMGs (Eastern, Western, Northern and South Eastern). The entity would be a body corporate of the 30 member councils.**
- **The Metropolitan Waste Management Group (MWMG) would have a 8 member board, with four members appointed by the 30 member councils and four members appointed by the Minister with specified skill/experience.**
- **The Board Chairperson will be one of the local government representatives, chosen by the Minister from the local government nominees to the Board.**
- **Broader engagement of local governments will be achieved through the establishment of a Metropolitan Local Governments Forum (MLGWF) as a formal part of the structure. MLGWF has a nominated representative of each member council and is responsible for nomination of the 4 local government board members.**
- **Metropolitan Waste Management Group (MWMG) would have the capacity to enter into contracts with service providers as principal or to facilitate back to back contracts between service providers and councils if appropriate.**
- **The funding for the Metropolitan Waste Management Group (MWMG) would be provided via the landfill levy, via grants or specific program funding or through co-sponsoring of specific projects by member councils.**

The Minister has sought the views of Council with comments to be made by 17 June 2005.

The current waste management arrangement

The South Eastern Region

- *The Regions contract for landfill services with Sita expired at the end of 2003. Cardinia had not been a party to the contract as it had a separate transport and disposal arrangement with Sita. Landfill tenders were advertised on behalf on councils and Cardinia entered into a new contract for landfill services with Sita commencing 1 January 2004.*
- *The Regional landfill at Hallam has adequate putrescible capacity for at least 10 years. Additional solid inert landfill space is required.*
- *There are no suitable new landfill sites in the Shire which have been identified by the Regional group at this stage.*
- *A new green waste processing facility which will incorporate the relocation of the existing transfer station has been given approval and site work has commenced. This site is expected to process green waste from at least three municipalities within the region.*

Collection

Weekly kerbside collection of refuse is provided to urban and rural properties using 120 litre MGB's under a contract with Thiess Services Pty. Ltd. The Shire collects from approximately 19,500 tenements which includes a small number of commercial premises.

Fortnightly kerbside recycling collection is provided to the same properties using a 240lt MGB.

A hard and green waste service operates on alternating months under a contract with DHR Waste Service. The hard waste service collected 727 tonnes and the green waste 33 tonnes during 2004.

The Shire landfilled 12,547 tonnes of household waste in 2004 (13,100 tonnes went to landfill in 2001).

Disposal

The Shire is a member of the South Eastern Regional Waste Management Group (SERWMG).

The Regions contract for landfill services with Sita expired at the end of 2003. Cardinia had not been a party to the contract as it had a separate transport and disposal arrangement with Sita. Landfill tenders were advertised on behalf on councils and Cardinia entered into a new contract for landfill services with Sita commencing 1 January 2004.

The Regional landfill at Hallam has adequate putrescible capacity for approximately ten years. Additional solid inert landfill space is required.

There are no suitable new landfill sites in the Shire which have been identified by the Regional group at this stage.

Collected refuse is taken direct to the regional landfill site in Hallam Rd. Hallam, operated by Sita. Recyclables are delivered to Thiess's Materials Recovery Facility in Wedgwood Dr Hallam.

The Pakenham Transfer Station, operated by Outlook Environmental (previously known as Minibah), is available to all residents and non-residents for the disposal of wastes in excess of the normal waste collection at a fee/m³.

A new council approved green waste processing facility will incorporate the relocation of the existing transfer station. This site is expected to process green waste from at least three municipalities within the region, commencing late 2005.

Recycling

Recyclables are transported direct to Thiess's Materials Recovery Centre (MRF) in Wedgwood Dr. Hallam for sorting.

Recyclables currently represents more than 35% of the total material collected as part of kerbside garbage and recycling service.

The Shire has a recycling presentation rate of 70% which is considered to be the average for Melbourne (7 of 10 houses put the recycling bin out every fortnight). The contamination rate at the MRF is 11% by volume, however this represents Cardinia, Casey and Greater Dandenong combined as our recyclables are processed together.

Green waste from the bi-monthly collection is currently taken to Consolidated Waste, Cranbourne for processing.

Nappy recycling

A collection and recycling service for single-use nappies is provided by My Planet Recycling (SGS) commenced in September 2004. This is a privately provided service with the Shire paying the provider an amount per tonne collected equal to what would have been paid if the nappies had gone to landfill. The EPA landfill levy is not included as it does not apply. The first two months saw 910kg diverted and by six months, 4900 kg diverted from landfill.

Litter bins

Street litter bins are currently emptied by depot staff. Reserves and parks have 240lt MGB's in almost all cases. The remaining litter bins and those in township areas are predominantly post mounted units with 55lt galvanised steel inners.

The steel inners have been identified as an OH&S issue because of the lifting required and should be replaced. Lightweight plastic 55lt inners have been trialled for a small number of bins and address the issue in the short term. The plastic ones are used to replace unserviceable steel ones. A program of replacing street bins with units that incorporate 120lt wheelie bin

inners should be implemented. All new bin installations should use a 120lt system. Collection frequencies or numbers of bins may be able to be reduced given the additional capacity. Developers have been advised of the need to use 120lt based systems in public areas that will ultimately be maintained by council.

Landfills

Nar Nar Goon Landfill (closed)

The landfill was closed on the 30th of June 2001 and rehabilitation work has been completed. Twice yearly monitoring of the gas and groundwater from the monitoring bores continues to occur with reports going to EPA as required. Reports to date have not indicated if there is any impact on groundwater and methane levels have been low.

There is still a need for the site to be used for disposal of excess soil, particularly to fill the depression in the vicinity of the gateway.

A strategy needs to be developed for the future use of the site.

Bayles Landfill

This unlicensed landfill is situated on the Kooweerup-Longwarry Road approximately 8 km south of the Nar Nar Goon facility. The Shire reduced the opening hours to Friday and Saturday only in mid 2004. The reduction in opening hours occurred because the site has essentially reached capacity, with only a small area at the front available. Shortly after the change in opening hours, the contractor vacated the site and Cardinia Shire staff took over operation of the site in mid 2004.

Gate prices were altered to match market rates and users surveyed to determine their place of origin. Most were found to have come from parts of the shire that were closer to the Pakenham Transfer Station than the Bayles site.

The site only accepts solid inert waste, no green waste and access to the site is restricted to local residents. Essentially steel is the only item recycled. The site is also used to stockpile excess soil which is also used for site remediation.

Its value is in providing a landfill site as a soil stockpile site. The Pakenham Transfer Station is better able to meet the needs of the community.

Minimisation

The Shire supported a policy seeking a reduction of waste to landfill by 50% by the year 2000. This policy was similar to State government guidelines for waste minimisation, however measurement of this was difficult.

These targets have now been changed to become a combination of increased resource recovery and reduction of waste to landfill. An overall reduction of waste to landfill of 10% is the goal. The implementation effect of this policy by the target date of 2000 is discussed below.

The Shire currently has the following recycling, waste minimisation and safe waste handling programs available to its residents:

- kerbside collection of mixed recyclables including glass, paper, plastics and metal (tin and aluminium cans);
- recycling bins to schools that undertake waste minimisation and recycling programs at a ratio of 1 bin per 200 students or part thereof with additional bins at a cost,
- recycling bins at cost for commercial premises that use commercial waste collectors,
- specially marked and signposted recycling bins are provided for community events free of charge,
- a green waste chipping facility provided at the Pakenham Transfer Station whereby residents can dispose of tree clippings etc. for mulching;
- limited recycling provided at the Pakenham Transfer Station. This provides recycling of oil, plastic oil containers, metals, batteries and saleable items such as white goods and electrical appliances;
- drumMUSTER recycling program for empty farm chemical containers,
- limited recycling facilities for silage wrap,
- provision of recycling bins to schools upon request, and
- sharps containers for residents provided by the Shire at no cost, for the safe containment and disposal of hypodermic needles.

Envirocom delivers a recycling and waste minimisation program to schools upon request. The program aims to educate staff and students and get sustainable programs implemented.

Current waste contracts – collection and disposal

The current kerbside waste collection and disposal contracts for the Shire are undertaken by Thiess Services Pty. Ltd. And DHR Waste Services Pty. Ltd.

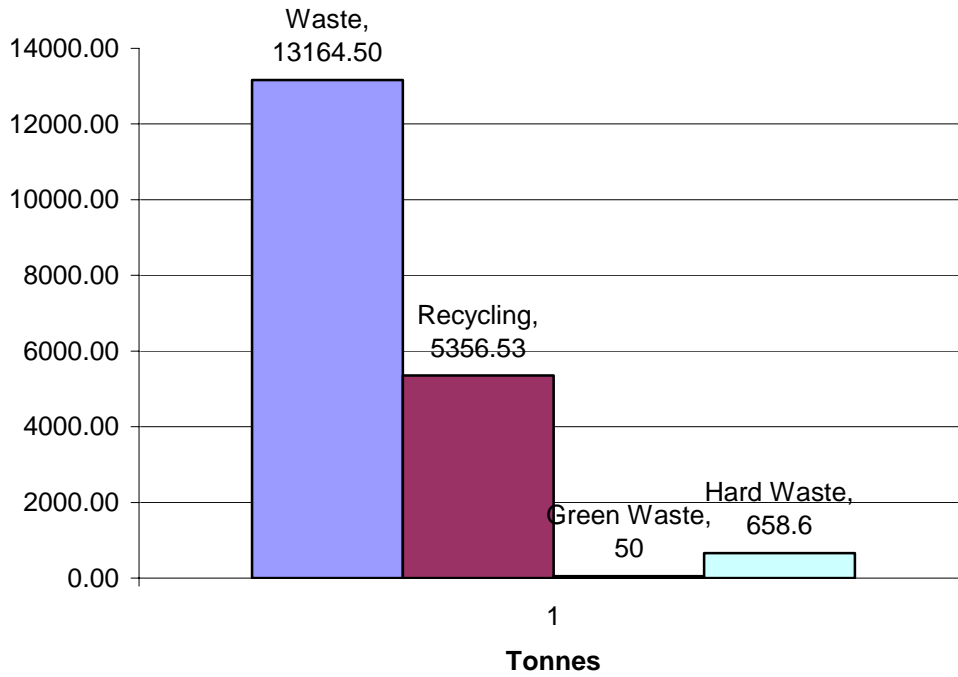
Contractor	Contract Description	Contract Expiry Date
Thiess Services	Collection of domestic waste on a weekly basis and transport to a nominated landfill site.	**30 June 2009
Thiess Services	Collection of domestic recyclables on a fortnightly basis and transport to the nominated Materials Recovery Facility (MRF)	**30 June 2009
Thiess Services	Processing of recyclables	30 June 2009
DHR Waste Services	At-call hard and green waste collection service with hard and green waste collections operating on alternate months.	30 June 2005 with 2 x 1 year extensions.
Sita Environmental Solutions	Provision of landfill services	31 December 2009

Waste quantities and statistics

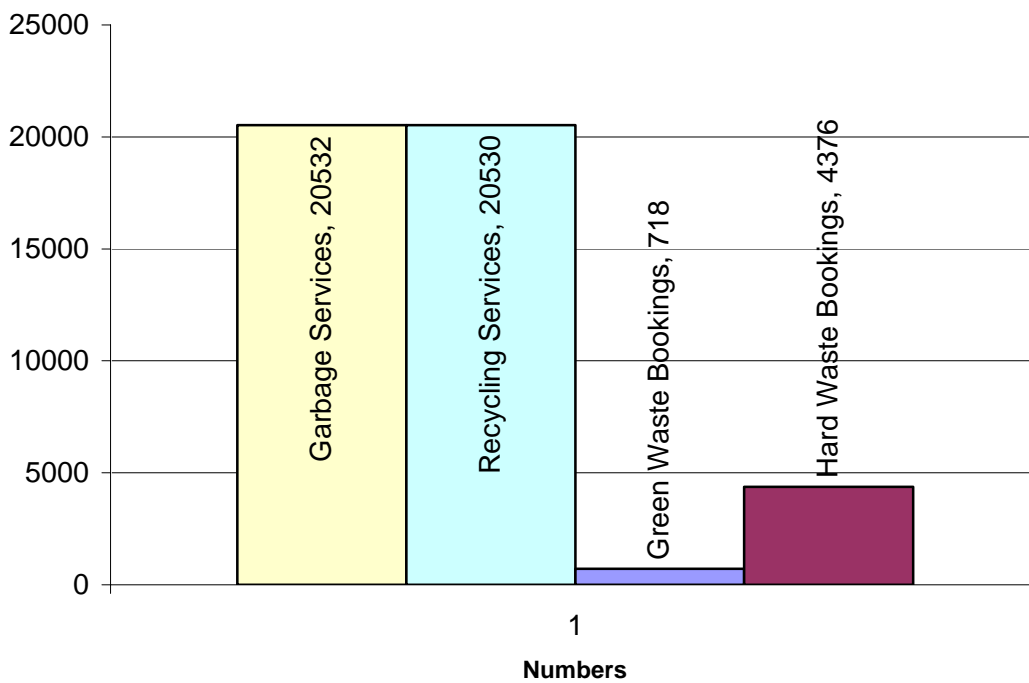
Waste Statistics

- *The Shire landfilled 12547 tonnes of kerbside collected household waste and recycled 4908 tonnes in 2004. (13,100 tonnes went to landfill and 2,400tonnes was recycled in 2001).*
- *The current resource recovery rate for the kerbside service is greater than 35%, however State and Regional objectives are*
45% resource recovery by 2009
65% resource recovery by 2014
10% reduction in total waste by 2014

Tonnes Collected 2004-05

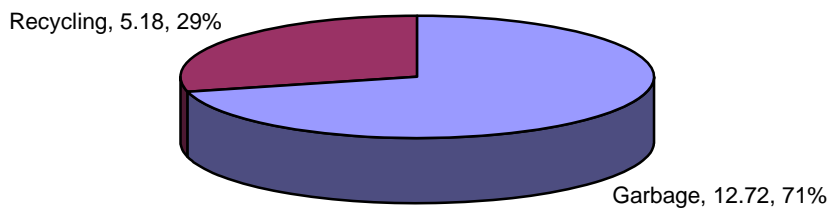


Services 2004-05



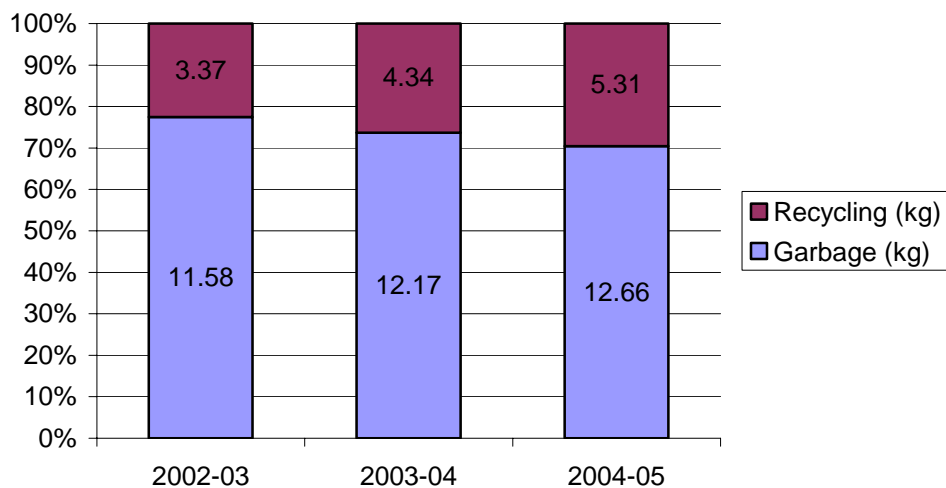
Approximately 700 of both the garbage and recycling services are commercial premises.

2004-05 Kg/household/week



The following chart shows that in each of the last three years that recycling has increased by 1kg/household/wk.

**Percentage Breakdown of Recyclables
kg/household/week**



Resource recovery and waste minimisation program

Waste minimisation

The State Government and SERWMG adopted targets are:

- 45% resource recovery by 2009
- 65% resource recovery by 2014
- 10% reduction in total waste by 2014

Council has a moral obligation to reduce waste and to provide a level of service that encourages its residents to do the same.

These targets could be achieved through:

- Further improvement of recycling practices to ensure less contamination of recyclables and a reduction in the amount of recyclables diverted to landfill. This could be achieved by the following:
 - ☐ continuing the recycling bin monitoring process and concentrating on the areas of highest contamination.
 - ☐ actively encouraging home composting;
 - ☐ releasing information to each household outlining the correct recycling procedures, and
- Improving the functionality of the green and hard waste service by
 - ☐ providing more convenient and frequent green waste collection.
 - ☐ Improving the recovery of recyclables in the hard waste.
- promotion of all recycling practices provided within the Shire including
 - ☐ kerbside collection of recyclables;
 - ☐ green waste recycling;
 - ☐ compost bin purchase program, and
 - ☐ collection points for other recyclables e.g. tyres, oil, phone books, car batteries.
- establishing fixed “public place” recycling for areas such as the local shopping centre, main streets in addition to the program of providing recycling bins for festivals, sporting events etc.;
- ensuring that Shire actively participate in waste minimisation and recycling practices such as double sided copying, using recycled paper and products, recycling printer and toner

cartridges, use of chipped green waste in public areas etc. The Shire should purchase regionally produced compost products for the parks and gardens contracts (contracts may require amendments to make this compulsory). This will actively utilise chipped green waste for parks, open spaces and road embankments;

- implementing Councils “Eco-Buy Policy” which includes:
 - The purchase of recycled, remanufactured or environmentally friendly office products;
 - Reducing packaging in Council purchases;
 - The purchase of recycled concrete and asphalt in road construction where practicable;
 - The purchase of renewable energy and reducing the reliance on fossil fuels;
 - The purchase of environmentally preferable outdoor equipment and materials such as furniture, landscaping materials and garden mulch.
- encouraging local businesses and industries to take part in the kerbside recycling program by supplying recycling bins at cost;
- actively support programs that encourage recycling and re-using building materials such as bricks, concrete etc. and minimise demolition and construction wastes currently going to landfill;
- promoting alternative practices to the disposal of soiled nappies e.g. nappy recycling services or use of cloth nappies and nappy washing services.;
- encouraging the community to reduce waste generated, to buy reduced packaged items, to avoid ‘throw away’ products etc., and
- explore opportunities for smaller bins.

The waste minimisation practices that are currently in place within the Shire should be maintained and improved as part of the Waste Management Strategy.

Green and hard waste

Where green waste services are not provided, green waste is found to represent approximately 33% of the total volume in the domestic garbage bin. The provision of an improved green waste service would assist in meeting the resource recovery targets.

The bi-monthly book-in green waste service does not meet the needs of many residents due to

- ☐ the infrequency
- ☐ the need to place lawn clippings in boxes or small containers
- ☐ the inability to have a wheelie bin emptied, even if they provide it.

The bi-monthly book-in hard waste service has several issues

- ☐ naturestrips look untidy as there appears to be year round waste in many streets.
- ☐ material is put out without booking and so remains there often until the following collection or longer.
- ☐ little or no recycling occurs as it is not viable to use separate trucks for different recyclables such as metal.

Workcover has taken an interest in the way hard waste collections are carried out, particularly in the practice of people riding on the outside of vehicles and the manual handling issues. This has made collections more difficult and increased the time required time to carry out collections.

The option may exist with a renegotiation of an extension to the green and hard waste contract to provide an annual collection shirewide, rather than the at-call service. This would provide for greater steel recycling and green waste collection as separate trucks would be used for each. This would address the issue of year round hard waste on the nature strip and limit to a three or four week period. There would also be no further issue with material being left because it wasn't booked in.

There is still a perceived demand for a bin based fortnightly green waste collection based on requests being made from residents in the residential areas. This may not be a shirewide service as the demand for green waste services in the rural area is unknown. It could be a user pay system, however industry sources suggest that unless the system was compulsory, the tendered rates would be similar to existing market rates offered by private contractors currently offering the service. A large number of properties, particularly in the new estates already use a private 240lt bin service apparently for garden waste.

Council's Local Law has now placed further limitations on burning off, particularly in residential areas where it is prohibited. Appropriate disposal options will provide residents with alternatives.

With the commencement of the local Twigg green waste processing facility, there is the possibility of obtaining savings in green waste processing because of reduced travel time. There is no current contract for disposal, just an agreed rate with Consolidated Waste in Cranbourne. A contract for disposal could be put out for tender.

A shire wide hard and green collection would still be provided, particularly to deal with bundled green waste and hard waste.

Estimate of service cost (see notes following table)

Service Type	Collection	Disposal to landfill	Est Volume	Total Cost
Shirewide Annual Collection Hard Waste	Total of \$150,000 (approx)	\$35,000 800t @ \$43/t.	50kg/tenement incl scrap steel	Hard and Green \$187,400
Shirewide Green Waste (bundled)	for both	\$2400 80t @ \$30/t	10kg/tenement	
240lt MGB Green Waste	\$0.40 - \$0.50 per tenement/wk (\$390,000)	\$180,000 6,000t @ \$30/t	400kg/yr @ \$26 per tonne	\$570,000 or \$38/tenement/yr

The current monthly book –in service is budgeted at \$144,000

In the 240lt MGB green waste service, it is assumed there are 15,000 tenement serviced.

Education

Education is crucial to ensure that residents actively participate in the recycling program and to ensure that contamination within the recycling stream does not occur. The current education system should be expanded to include all members of the community.

Some waste education assistance is provided by the Regional Waste Management Group, but is only of a general nature. A private waste education provider, Envirocom is used to provide in-school programs for staff and students to help schools establish their own recycling and waste minimisation programs. The aim is to also influence what happens in the home. Envirocom has also been used to assist with promotion and organisation of community events to achieve Waste Wise status.

Thiess provide an education venue at the recycling facility for school groups and other groups as required. An interactive program is run there free of charge and has seen some of Cardinia's schools attend.

The recycling bin inspection is carried out in the areas where contamination is more prevalent by "The Bin Cop" (Scoop enterprises) who also conduct the education sessions at the Thiess facility. The reduction in contamination of recyclables is evident

Actions proposed are:

- Continue the bin inspection and education program in the problem areas.
- An active marketing plan for the Waste Management Strategy which would involve communication through the media e.g. Connect Cardinia; the local press and displays at community events. The information should be simple and easy to understand, convey the right messages. It should inform of the reasons for changes to the waste disposal system and be of a suitable standard to reflect the importance of the issue and the dedication of the Shire to waste minimisation.
- Look at funding options to assist with the provision of a Waste Education Officer, possibly as a part time position in the 2006/07 financial year.
- Continue to improve the community and school education programs and encourage participation in programs such as “Waste Wise Schools”, “Waste Wise Businesses” and “Sustainable Communities”.
- Information should be provided to the community about the progress on waste being landfilled and recycling rates, any problems encountered, measures for improvement, ways the community can become more involved.
- Offer “Follow your waste” bus tours” for residents that incorporates a trip to the Sita landfill and the Thies facility to give them a greater understanding of what waste collection and recycling involves. Tours to commence by September 2006.

Litter control

As with most communities the bulk of litter problems are associated with the following:

- shopping areas;
- community gatherings;
- recreation areas;
- fast food outlets, and
- along roadsides in rural areas (dumped rubbish).

The approach to dealing with litter is different for each area and various ideas are presented below. It is recommended that the Shire undertake to prepare a strategy for minimising litter. The litter strategy should be developed in close collaboration with the community as it will provide an obvious and direct public education opportunity. Furthermore if some immediately implementable actions can be undertaken and “advertised” there will be increased public awareness.

Shopping areas

- Review the location and type of litter bins and provide collection frequencies appropriate to the need.
- Work with shop keepers to gain their assistance in reducing packaging, providing facilities and educating the public.
- Carefully evaluate the need for kerbside litter traps to catch water carrying litter.
- Improve the training of staff emptying litter bins and street sweeping to ensure all litter is collected and facilities are properly maintained.

Community gatherings

- Ensure adequate facilities are provided.
- Use the venue to educate the public.
- Have bins, including recycling bins, near exits, inside and out.

Fast food outlets

- Discourage the use of plastic bags.
- Review bins locations, capacity with operator both on and off site.
- Seek their assistance in educating patrons.

Parks and reserves

Litter collection in parks and reserves is partially the responsibility of the Parks and Gardens contractor and the Litter crew. There are still some areas that neither have responsibility for such as litter in lakes or ponds that is further than 1mt from the edge. Litter on roadsides as well as dumped rubbish is also an issue. Currently a truck and front end loader are used on a monthly basis to attend to quantities of dumped rubbish. This is an inefficient method because of the time delay and also these resources are taken away from there normal duties to perform this function.

There is a need to develop a Litter Strategy to deal with all litter issues incorporating broadscale public consultation.

Location of transfer stations

Table 4 – Transfer station locations

Municipality	Location
Bayside	Talinga Road, Cheltenham
Boroondara	Riversdale Road, Council Depot
Cardinia	Exchange Drive Pakenham
Casey	Cemetery Road, Cranbourne
Casey	Sita Landfill - Hallam Road, Lyndhurst
Frankston	McClelland Drive - Landfill
Kingston	Baxters, Fraser Road, Clayton
Kingston	Regional Landfill - Clayton Road, corner Ryans Road
Monash	Ferntree Gully Road and Blackburn Road
Monash	Twigg Group Caroll Rd. Clarinda Landfill
Stonnington	Stonnington Transfer Station - Surrey Street, South Yarra

Source: SERWMG Strategy, August 2004.

Landfill in adjoining region used by residents.

Yarra Ranges	Wellington Road - Lysterfield
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Due to the close proximity of the many Transfer Stations within the SERWMG, and the central position within the Shire of the transfer facility at Pakenham, it is suggested that further Transfer Stations are not required at this time as the western segment of the Shire is within 20 km of the nearest Regional Transfer Station.