



WASTE MANAGEMENT STRATEGY

**MOUNT ALEXANDER SHIRE COUNCIL
2010 – 2015**

EXECUTIVE SUMMARY

This Waste Management Strategy (WMS) has been developed as part of the commitment by Mount Alexander Shire Council (MASC) to provide sustainable solutions to the collection, disposal and resource recovery of waste. The WMS describes strategies and actions to be undertaken by MASC over the next five years (2010 – 2015) and its key aims are to guide the development and improvement of current waste management practices. The WMS strives to provide a sound basis for MASC to implement actions and strategies to achieve waste minimisation, increased recycling and improved waste treatment and disposal across the Shire.

The future directions of waste management within our municipality need to be consistent and work towards those of the region and Victoria as a whole. As such, the key drivers for this strategy are:

- Government policies and commitments relating to the Towards Zero Waste (TZW) strategy and targets;
- The need to deal with the projected population increases and economic growth of Mount Alexander Shire and Victoria, in terms of sustainable outcomes for waste and materials recovery;
- The need to manage and reduce greenhouse gas emissions and energy and water consumption in response to climate change; and
- Government policies seeking to increase energy generation from renewable sources.

The management of waste, including collection and disposal, hard waste, litter, and street litter bins, is a major component of MASC's annual budget, therefore waste management needs to be appropriately supervised.

The WMS focuses on key areas for MASC to achieve its goal of greater sustainability in waste management. Each of these areas is discussed with regard to the issues and opportunities for Council and ultimately a range of recommendations are provided to improve our current waste management system. The key areas focused on within this report are:

- Waste information
- Current waste facilities management
- Landfill strategy and operation
- Waste service charges
- Kerbside waste collection
- Rural waste services
- Green waste and kitchen organics
- Hard waste services
- Regional co-operation
- Advanced Waste Treatment (AWT) facility development
- Education
- Litter and illegal dumping

The Action Plan highlights the key proposals to achieve our waste management goals, setting ownership and delivery dates to ensure the actions occur in a timely and effective way.

The report has not included a requirement to measure the impact of the recommendations proposed due to a current lack of information. Once we start to gather information and create a true set of data, we will be able to measure our successes clearly.

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Appendix A Key Federal and State Legislation and Policies and Other Initiatives

List of Acronyms

ARRT	Advanced Resource Recovery Technology
C&I	Commercial and Industrial
C&D	Construction and Demolition
DSE	Department of Sustainability and Environment
EPA	Environment Protection Authority Victoria
MGB	Mobile Garbage Bin (i.e. wheelie bin)
MRF	Materials Recovery Facility
MSW	Municipal Solid Waste
PPR	Public Place Recycling
PLB	Public Litter Bin
SIWMP	Solid Industrial Waste Management Plan
SV	Sustainability Victoria
TZW	Towards Zero Waste
WMS	Waste Management Strategy

1 INTRODUCTION

1.1 PURPOSE

Mount Alexander Shire Council (MASC) has created this Waste Management Strategy (WMS) as part of our commitment to provide sustainable solutions to the collection, disposal and resource recovery of waste. The WMS describes strategies and actions we will undertake over the next five years (2010 – 2015) to develop and improve waste management practices.

The future directions of waste management within our municipality need to be consistent and work towards those of the region and Victoria as a whole. Key drivers for this strategy include:

- Government policies and commitments relating to the Toward Zero Waste (TZW) strategy and targets;
- The need to deal with the projected population increases and economic growth of Mount Alexander Shire and Victoria, in terms of sustainable outcomes for waste and materials recovery;
- The need to manage and reduce greenhouse gas emissions and energy and water consumption in response to climate change; and
- Government policies seeking to increase energy generation from renewable sources.

The management of waste including collection and disposal, hard waste, litter, and street litter bins is a major component of MASC's annual budget, therefore waste management needs to be appropriately resourced.

1.2 OBJECTIVES

This WMS identifies processes, strategies and key outcomes for the provision of effective waste services that achieve Council's goals of improved sustainability, reduced green house gas emissions and maintenance of a high level of service for the period of 2010 – 2015. The WMS strives to provide a sound basis for actions and strategies to achieve waste minimisation, increased recycling and improved waste treatment and disposal across the Shire.

Key criteria of the WMS were to:

- review current and future needs in waste management;
- establish policies and actions, in keeping with current legislation, best practices, and community aspirations;
- provide clear direction to Council and its community for the delivery of sustainable waste services;
- develop service standards which meet the needs of the community and adhere to best practice models for ensuring Towards Zero Waste targets; and
- raise awareness and increase the community's participation in the overall reduction of waste.

1.3 COUNCIL OVERVIEW

Mount Alexander Shire is 120 kms North West of Melbourne and covers 1,531 square kilometres with a total population of 18,397¹; approximately 50% living in Castlemaine and Maldon. The surrounding municipalities are the City of Greater Bendigo and the Shires of Hepburn, Central Goldfields, Macedon Ranges, Loddon and Mitchell, (see Figure 1 Appendix A). MASC currently is a member of the Calder Regional Waste Management Group (CRWVG) along with the City of Greater

¹ Victoria in Future 2008

<http://www.dse.vic.gov.au/dse/dsenres.nsf/LinkView/BD4EF8A400A9E6DECA256D8D00151A4F775206E3E0281595CA256F0E0013C1FB>

Bendigo and Macedon Ranges Shire. The Minister for Environment and Climate Change recently advised that a new operating structure for regional waste management will be based on seven statutory Regional Waste Management Groups. Under this structure, the Calder and Central Murray Regional Waste Management Groups will be merged. The new structure will therefore include the municipalities of Bendigo, Macedon Ranges, Mount Alexander, Swan Hill, Buloke, Gannawarra and Loddon. The larger Regional Management Committee (RMC) will essentially perform the same role as the CRWMG.

1.3.1 Local Waste Management

MASC is responsible for a wide range of waste management activities including:

- bin collections for recyclables and residual waste;
- disposal of material collected at a licensed landfill;
- transfer station waste;
- processing of green waste collected at transfer stations;
- street litter bins;
- litter collection;
- illegally dumped rubbish collection; and
- street sweeping.

The cost of providing these services for the 2009/2010 year was in excess of \$2.5 million. This cost is expected to grow due to population growth, greater legislative environmental responsibility and any future national carbon strategy that may be implemented.

1.3.2 Local Population Characteristics

Mount Alexander Shire has an industrial heritage stretching back to the gold rush era. The region contains a number of manufacturing industries that provide local employment. The excellent transport links to Melbourne have also made the region a prime location for Melbournians to relocate to retire or for lifestyle change reasons. Table 1 below shows the current and projected population projections for the Council.

Table 1-1 Population and Dwellings – Current and Projected

	2009 ² (Current)		2014 (Projected)		2019 (Projected)	
	Residents	Dwellings ³	Residents	Dwellings ⁴	Residents	Dwellings ⁵
Number	18,397	8,240	19,656	8,329	20,944	9,028
Growth Rate	1.3%	1.8%	1.3%	1.8%	1.3%	1.7%

² Victoria in Future 2008

<http://www.dse.vic.gov.au/dse/dsenres.nsf/LinkView/BD4EF8A400A9E6DECA256D8D00151A4F775206E3E0281595CA256F0E0013C1FB>

³ Figure provided by MASC

⁴ Number of households calculated by taking Victoria in Future regional Victoria average persons per household and dividing against the Victoria in future population predictions for Mount Alexander Shire.

⁵ Number of households calculated by taking Victoria in Future regional Victoria average persons per household and dividing against the Victoria in future population predictions for Mount Alexander Shire.

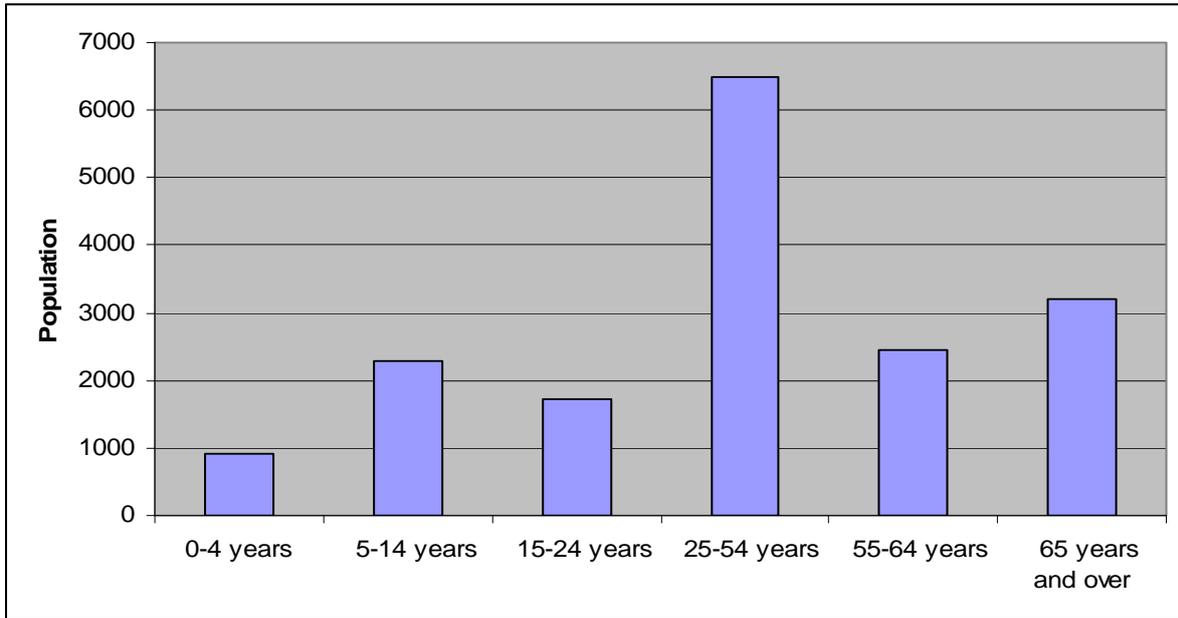


Figure 1-1 Mount Alexander Shire 2006 census age distribution of population

1.3.3 Key Issues for the Municipality

The Council has identified a number of areas where specific review of current waste management practices is required, including:

- rural waste collection service provision levels;
- equity in user costs for waste management across the Shire;
- increasing resource recovery;
- hard waste collection provision;
- Public Litter Bins (PLBs) and Public Place Recycling (PPR) provision;
- Commercial waste service provision; and
- review of Castlemaine landfill life plan.

1.4 WASTE OVERVIEW

The WMS incorporates the strategies and actions for the management of a variety of waste materials. The focus of the strategy is on Municipal Solid Waste (MSW), although the strategy also addresses Commercial and Industrial (C&I) waste and Construction and Demolition (C&D) waste. Materials include:

- Kerbside collected waste, including:
 - recyclables; and
 - residual bins.
- Hard waste;
- Transfer stations waste;
- Street litter (including PLBs);
- Public place recycling; and
- Illegally dumped waste.

2 STRATEGIC FRAMEWORK

2.1 STRATEGIC CONTEXT

The WMS has been prepared with consideration of relevant legislation and policies that have been developed at both the Federal and State Government level. These documents include:

- *Environment Protection Act 1970* (EP Act);
- Federal Government's *National Waste Policy*;
- Victorian State Government's *Our Environment Our Future: Victoria's Sustainability Framework*; and
- Victorian State Government's *Towards Zero Waste Strategy* (TZW).

Figure 2.1 below illustrates how the legislation, policies and strategic plans are considered and integrated into this WMS.

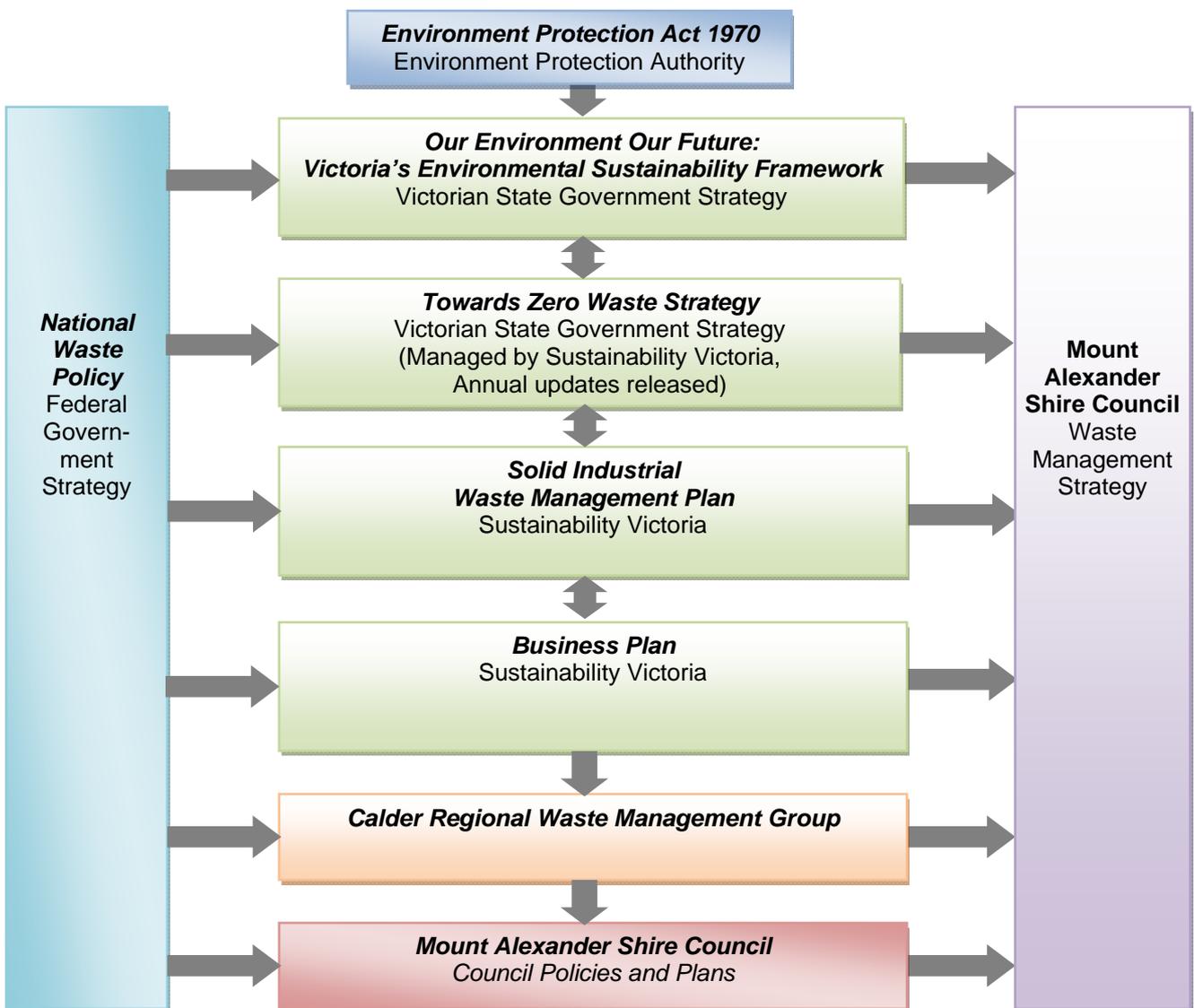


Figure 2-1 Interlinking of Legislation, Policies, Strategic and Business Plans

The fundamental principle underpinning this WMS is the waste management hierarchy, which is a key principle of the *Environment Protection Act 1970*. The waste management hierarchy places waste avoidance as the most preferred option and waste disposal the least preferred. All the policies developed by all levels of government are based on this principle.



Figure 2-2 Waste Management Hierarchy

2.2 SIGNIFICANT FEDERAL AND STATE LEGISLATION AND POLICIES

2.2.1 Federal

- **The National Waste Policy** – Endorsed by the Environment Protection Authority and Heritage Council on 5 July 2010; sets the direction for Australia over the next 10 years to produce less waste for disposal and manage waste as a resource to deliver economic, environmental and social benefits.
- **National Initiatives** – The National Packaging Covenant is currently under review and it is to be seen whether it will remain as a voluntary initiative by government and industry to reduce the effects of packaging on the environment as in its previous format.
- **National Greenhouse and Energy Reporting (NGER) Act and Regulations** – establishes a national framework for reporting of greenhouse gas emissions, reductions, removals and offsets, and energy consumption.

2.2.2 State

- **Victorian State Government Towards Zero Waste Strategy (TZW)** - objectives of TZW are to reduce and recover solid waste and to reduce the environmentally damaging impacts of waste. The three key targets of the TZW strategy are:
 - **Reduce** the amount of waste generated by 1.5 million tonnes per annum by 2014, compared to 2002/03.

- Increase the **recovery** rate in all solid waste generated from the current 48% (2003) to 75% by 2014 comprising:
 - 65% recovery rate (by weight) of MSW for reuse and recycling by 2014. An interim target of 45% recovery rate is established for 2008-09;
 - 80% recovery (by weight) of (C&I) solid waste for reuse and recycling by 2014. An interim target of 65% is established for 2008-09; and
 - 80% recovery rate (by weight) of (C&D) solid waste for reuse and recycling by 2014. An interim target of 65% is established for 2008-09.
- 25% reduction in littering behaviour compared with 2003 levels.
- **Victorian Litter Strategy – Creating Cleaner, Safer Places** – strategy to prevent litter and improve litter management practices to meet the TZW littering behaviour target and achieve clean and safe public places.
- **Solid Industrial Waste Management Plan** - developed to establish goals and targets for solid waste management (e.g. C&I and C&D waste) in Victoria.
- **Best Practice Environmental Management for Designed Operation of Landfills (2001) (2010 Draft currently out for consultation)** – Victorian EPA guidance on the design and operation of landfills in Victoria.
- **Victorian EPA Landfill Levies** – Victorian Landfill levies are set to increase steadily to \$26.60 per tonne for Municipal Solid Waste (MSW) in rural locations and \$53.20 per tonne for MSW in Melbourne and provincial centres by 2014/15.

Other waste issues or initiatives include:

- EPA Victoria guidelines and policy initiatives;
- product stewardship programs;
- contaminated soils and hazardous waste initiatives; and
- occupational health and safety, Worksafe Victoria guidelines and standards.

2.2.3 Calder Regional Waste Management Group

Regional Waste Management Groups were established under the *Environment Protection (Amendment) Act 1996 and 2006* and their responsibilities and functions are set out in the *Environment Protection Act 1970*.

Regional Waste Management Groups are responsible for planning the management of MSW in Victoria. There were 13 regions and each one encompasses one or more municipalities. Mount Alexander Shire currently falls within the Calder Regional Waste Management Group (CRWMG). The remit of CRWMG is to coordinate and direct the waste management activities of its member Councils with the production of a regional plan to provide the overarching guidance. The most recent Calder Regional Waste Management Plan available was the 1999 Draft Calder Regional Waste Management Plan.

CRWMG has a key role in Sustainability Victoria's plan for educating the community about waste and environmental issues. Each Regional Waste Management Group has one or more Regional Education Officers who provide advice and assistance with waste reduction programs, such as:

Resource Smart Schools - waste and litter reduction programs and curriculum materials for schools; and

Waste Wise at Events - tools and advice for event organisers to create effective recycling and waste management systems.

At the time of writing the future of CRWMG has been determined by the Minister for the Environment and Climate Change, with the Council destined to fall within a larger Regional Management Committee in the near future.

2.2.4 Mount Alexander Shire Council (MASC)

As the body that implements waste management contracts and strategies within the municipality, the Council has a significant impact on the foundation of this WMS. Furthermore MASC maintains a large number of policies and identified areas of interest that impact upon the design of this WMS including:

- Waste management services;
- Charging of rates, specifically the garbage charge;
- Green house action plan;
- Land management and conservation programme;
- Roadside conservation; and
- Weed control and management.

3 CURRENT WASTE MANAGEMENT

MASC provides kerbside waste and recyclables collection services to 83.5% of households and to a number of businesses. The businesses and the 16.5% households not provided with a kerbside collection can use the transfer stations in Maldon and Castlemaine.

Households and businesses that receive kerbside collections incur a waste service charge in their rates. Households and businesses that transport their waste to a transfer station pay a gate fee based on volume or weight deposited for each trip. Recyclables delivered to the transfer station do not incur a charge or incur a minimal charge. Households and businesses that receive a kerbside collection service may also use the transfer stations under the same arrangements.

3.1 OVERVIEW OF CURRENT COUNCIL WASTE CONTRACTS

Council currently operates three main contracts for management of waste services.

Table 3-1 Overview of MASC waste contracts

Service	Contractor	Number of services	Contract expiration (plus extensions)
MASC owned 140L MGB garbage bin collection		3,585	
New Cleanaway owned 140L & 80L MGB garbage bin collection		3,635	
240L MGB recycling bin collection	Cleanaway	7,220	June 2011 (1+1)
Street Litter Bins Collection - Castlemaine		841	
Street Litter Bin Collection – other areas of MASC		509	
Castlemaine Landfill and transfer station	Mulchit Australia	N/A	November 2013 (1+1)
Maldon transfer station			

The current kerbside recyclables contract provides for the collection of a best practice range of materials⁶ including:

- Paper
- Card
- Glass containers
- Plastic 1-7
- Steel
- Aluminium

⁶ This represents the materials which can viably be collected from the kerbside for recycling in Victoria

3.2 WASTE PROJECTIONS

Waste projections for MASC presented in table 3-2 below assume the following:

- No increase in waste generation rates per person;
- Maintenance of the proportion of households that receive kerbside collection to persons using transfer stations at Maldon and Castlemaine;
- Increase in total waste generation proportional to population growth;
- A further 5% increase in recyclables collections every 5 years⁷;
- Increased recyclables tonnages causes a corresponding reduction in MSW tonnages, but do not impact on the total tonnage generated per person; and
- Population growth is as per Victoria in Future (2008) predictions.

Table 3-2 Waste projections for Mount Alexander Shire

Waste source	2009 (Current) tonnes p.a.	2014 (Projected) tonnes p.a.	2019 (Projected) tonnes p.a.
Kerbside garbage	3,390	3,622	3,772
C&I and C&D garbage	3,061	3,260	3,474
Clean Fill	6,030	6,422	6,844
Asbestos and contaminated soils	43	46	49
Transfer station public garbage	1,645	1,658	1,680
Public litter bin waste	646	687	733
Kerbside recyclables	1,880	1,991	2,206
Transfer station recyclables	1,049	1,170	1,296
Transfer station green waste	818	912	1,010
Contamination of kerbside recyclables	99 ⁸	105 ⁶	116 ⁶
Municipal waste generation	9,926 ⁹	10,145	10,812
Total Shire waste generation	18,659	19,872	21,179
Total Shire landfill diversion	21%	21%	21%
Total Shire landfill diversion, not including clean fill	30%	30%	30%

Note: the above table assumes that waste growth will be the same as population growth as provided in the Victoria in future predictions¹⁰.

⁷ This increase in recycling is based upon the assumption that recycling will improve with time as the Regional Waste Management Group, State Government, MASC and general media identify the benefits of recycling to the public.

⁸ This is the reported contamination rate for kerbside recyclables. It should be noted that this is half of the Victorian Government 10% benchmark (http://www.resourcesmart.vic.gov.au/documents/PSS_final_doc_sept.pdf) as such there is some uncertainty regarding the measurement and recording of the figure.

⁹ This figure includes C&I and C&D recyclables and green waste at the transfer station as these are co-reported with public figures.

Currently there is no reporting on recyclables and green waste received at the Maldon transfer station. Calculation, based on the assumption that Maldon transfer station would generate the same proportion of recyclables and green waste to garbage waste as Castlemaine transfer station, indicates Maldon transfer station would cause a small increase in tonnages for recyclables and green waste arising.

The current contamination rate of the kerbside recyclables collection is currently not reported either. Instead, the contamination rate is based upon discussion with the recyclables collection contractor, Cleanaway, who transport the recyclables to a Materials Recycling Facility (MRF) in Bendigo. The MRF contract with Cleanaway contains a clause that if contamination is above 5% then there will be an excess charge on the gate fee. This charge is not incurred suggesting that the contamination rate of the materials collected is below 5%. It is noted that this is half of the industry benchmark of 10% and that there is anecdotal evidence that the figure is higher than 5%.

Understanding the contamination rate that is achieved by the kerbside collection system is integral for gauging community understanding of the kerbside recyclables collection service. Identification of the specific contamination rate means that Council can implement specific actions to target contamination and correct use of the kerbside recyclables bin, if required.

The figures indicate that MASC achieved a 21% diversion of waste for all waste streams. However if clean fill is removed from the waste arisings, then a 30% landfill diversion figure could be achieved.

¹⁰ Victoria in Future 2008
<http://www.dse.vic.gov.au/dse/dsenres.nsf/LinkView/BD4EF8A400A9E6DECA256D8D00151A4F775206E3E0281595CA256F0E0013C1FB>

3.3 WASTE MANAGEMENT FACILITIES

Council operates three waste management facilities. A list of the facilities, the waste accepted and annual tonnages are provided below.

Table 3-3 Waste Management Facilities

Waste management facility	Wastes accepted	Quantities (tonnes)
Castlemaine landfill -Weighbridge	- Solid inert wastes	
	- Putrescible wastes	
	- Asbestos waste of domestic origin	
	- Pneumatic automatic tyres shredded to less than 250 mm in diameters	14,088
	- Category C prescribed industrial waste (PIW)	
Castlemaine transfer station -Co-located at Castlemaine landfill -Weighbridge	- Solid inert wastes	
	- Putrescible wastes	
	- Glass bottles and jars	
	- Clean green waste	
	- Waste Oil	1,242 – MSW
	- Plastic 1-7	1,014 – Recyclables (includes Maldon TS)
	- Steel and Aluminium Cans	818 – Green waste (Includes Maldon TS)
	- Timber	
	- Paper and cardboard	
	- Metals (various)	
- White goods		
- Tyres		
Maldon transfer station -No weighbridge	- Solid inert wastes	
	- Putrescible wastes	
	- Glass bottles and jars	
	- Clean green waste	
	- Waste Oil	
	- Plastic 1-7	97 – MSW
	- Steel and Aluminium Cans	Recyclables and Green waste figures unknown.
	- Timber	
	- Paper and cardboard	
	- Metals (various)	
	- White goods	
- Tyres		

3.4 WASTE GENERATION RATES AND QUANTITIES

Waste generation rates and quantity estimates for MSW for the whole Shire are shown in table 3-2. Kerbside and transfer station collection composition and quantities have been summarised in the tables 3-4 and 3-5 below.

Kerbside waste collection is provided to 83.5% of the Shire's population and a number of businesses within the major population centres. The reported kerbside waste collection figures for 2008-09 are provided below.

3.5 KERBSIDE WASTE GENERATION

Table 3-4 MSW kerbside waste generation rates for financial year 2008-09 as reported by the kerbside service provider

	Current Quantity (tonnes)	kg / hh / yr	kg / pp / yr ¹¹
Garbage	3,390	493	205
Recyclables	1,880	273	114
Contamination	99	14	6
Total waste generation	5,369	781	325
Diversion rate (%)	35%	35%	35%

Sustainability Victoria in 2007-08¹² reported a 30% landfill diversion for kerbside collected materials. The table above indicates that this has increased to 35% in 2008-09.

Kerbside waste is collected mainly from households and a few commercial properties, therefore it is assumed that the waste figures from the collection system are representative of a household in MASC. The figures provided in the table above are based on the number of bin lifts undertaken and the Victoria in Future figure for the average number of persons living in a regional household.

3.5.1 Waste Audit Data for Garbage MGBs

In June 2010 Calder Regional Waste Management Group (CRWVG) undertook waste audits of 200 garbage bins in Mount Alexander Shire. The work audited 2,289Kg of waste in total, representing an average bin weight of 11.5Kg.

Figure 3-1: Waste Composition for garbage bins in Mount Alexander Shire June 2010¹³

Category	Average percentage of garbage composition (%)	Tonnage of material represents for the whole of the Shire (tonnes)
Paper / Newspaper/ Card	5.1	173
Glass	3.5	119
PET (1-7)	1.5	51
Aluminium cans	0.1	3
Steel cans	0.7	24
Aerosol Cans	0.2	7
Green waste	16.7	566
Other waste	72.0	2,441
Total	100.0	3,390
Potential diversion (with current systems)	27.8	943

The data indicates that 27.8% of the material that currently enters the kerbside garbage bin could be diverted from landfill through services already provided by the Council. This represents 943 tonnes

¹¹ Based Victoria in Future data stating 2.4 persons per household in Regional Victoria in 2010.

¹² http://www.sustainability.vic.gov.au/resources/documents/local_government_annual_survey.pdf

¹³ Wastemin "Calder RWVG 2010 Garbage Audits – June 2010"

of material that could potentially be diverted from landfill through correct utilisation of the services provided.

11.1% or 376 tonnes of wastage collected in the garbage bins should be collected in the kerbside recyclables collection service. This indicates that with the right influences, such as education, Council could increase its kerbside recycling by 11.1% for no additional cost. A further 16.7% or 566 tonnes represents green waste that could be self hauled to a transfer station for diversion from landfill.

3.6 TRANSFER STATION WASTE ARISING

Transfer station figures contain a more balanced mix of public and commercial waste figures. The transfer stations report garbage arisings for commercial and public vehicles, but not for recyclables or green waste. As such it is not possible to identify the quantity of recyclables or green waste arising from either the public or commercial sector. The table below summarises the transfer station waste arisings for 2008-09.

Table 3-5 Total collection quantities for all transfer stations for financial year 2008-09¹⁴

	Current Quantity (tonnes)
Garbage municipal	1,645
Garbage C&I and C&D	3,061
Clean fill	6,030
Contaminated soils and asbestos	43
Green waste (used for landfill capping)	818
Recyclables (Diverted from landfill)	1,049
Total waste generation	12,646
Total waste generation not including clean fill	6,616
Total diverted from landfill (recyclables and green waste)	1,867
Diversion rate (%)	15%
Diversion rate (%), not including clean fill	28%

¹⁴ Figures reported by transfer station operator. Note that calculations to convert volumes to tonnages have been undertaken. Densities used in these calculations include clean fill material at 1m³ = 550 Kg and Green waste 1m³ = 250Kg. Recyclable densities have been based on a range of densities

4 Key Issues

4.1 WASTE INFORMATION

Information and statistics on current waste management activities are essential to analyse the waste management system, trends in waste arisings and to understand how to improve the system. Currently there are a number of data gaps regarding aspects of the MASC waste management operation.

Table 4-1 Summary of waste information issues and improvement measures

Area of Concern	Issue	Improvement measures	Positives / Negatives
Waste composition and volumes Kerbside collections	<ul style="list-style-type: none"> Waste composition for garbage bins has been measured once. There is no data on the composition of material in the co-mingled recycling bin. Beneficial to know waste volumes by household for different areas of the Shire. 	<ul style="list-style-type: none"> Undertake a waste audit of all kerbside collection services across the Shire, ideally every 2 years and at least every 5 years to inform waste management strategy. 	<ul style="list-style-type: none"> Ability to identify waste trends across the Shire and to target key waste streams. Ability to identify public understanding of what can be recycled. Ability to identify key areas where waste arisings are occurring and target them to aid landfill diversion.
Waste Composition Transfer Station	<ul style="list-style-type: none"> Waste composition of garbage material at the transfer station is unknown. 	<ul style="list-style-type: none"> Undertake a waste audit of transfer station waste bins, ideally every 2 years and at least every 5 years to inform waste management strategy. 	<ul style="list-style-type: none"> Ability to identify waste trends across the Shire and to target key waste streams. Ability to identify public understanding of what can be recycled.
Reporting of tonnages	<ul style="list-style-type: none"> Allows analysis of: <ul style="list-style-type: none"> waste facilities waste streams waste sources 	<ul style="list-style-type: none"> Request information be recorded and reported for all facilities. Include as a requirement of future waste contracts. 	<ul style="list-style-type: none"> Allows assessment of the facilities and identification of where improvements might be needed.
Recyclables contamination reporting	<ul style="list-style-type: none"> Allows understanding of effectiveness of recyclables collection. 	<ul style="list-style-type: none"> Request information to be recorded by collection contractor. Include as a requirement in any future recyclables collection contracts. 	<ul style="list-style-type: none"> Allows understanding of how well the kerbside recyclables bin is being used. Identifies if education might be needed for the recyclables collection service.
Specific operational cost of facilities	<ul style="list-style-type: none"> Identify direct cost of each facility. 	<ul style="list-style-type: none"> Request information to be provided by operator. Include as a requirement in future waste management contract. 	<ul style="list-style-type: none"> Allows analysis of each facility and understanding of the financial cost and benefit.

Recommendation: It is recommended that the Council progressively implement each of the above identified waste information improvement measures.

4.2 TRANSFER STATIONS

Transfer stations are a fundamental method of waste collection and landfill diversion within MASC. A number of issues and improvement measures have been identified to improve the design and operation of Castlemaine and Maldon transfer stations.

Table 4-2 Summary of transfer station issues and improvement measures

Area of Concern	Issue	Improvement measures	Positives / Negatives
Transfer station design	<ul style="list-style-type: none"> Achieve improved landfill diversion from the current 28%¹⁵. 	<ul style="list-style-type: none"> Review design of transfer stations against Sustainability Victoria best practice guidelines. Upgrade transfer station signs to best practice guidelines¹⁶. 	<ul style="list-style-type: none"> Improved landfill diversion from transfer stations. Improved operational health and safety at transfer stations. Cost of upgrade.
Clean fill tonnages	<ul style="list-style-type: none"> Need to understand clean fill waste arisings. There is significant confusion around clean fill arisings currently. 	<ul style="list-style-type: none"> Ensure all clean fill is weighed and recorded on entry to the landfill. Identify why historical clean fill figures are so high. 	<ul style="list-style-type: none"> Understanding of clean fill tonnages. This will influence clean fill gate fees and the need/desire to divert clean fill from Castlemaine landfill.
Clean fill gate fees	<ul style="list-style-type: none"> Recover some or all of the cost of clean fill to MASC. Reduce the volume of clean fill received. 	<ul style="list-style-type: none"> Charge a gate fee for clean fill at waste facilities. 	<ul style="list-style-type: none"> Recovery of some or all of the cost of clean fill handling and disposal. Reduction in the volume of clean fill received to preserve landfill airspace. Potential to not receive enough clean fill for daily cover at landfill.
Clean fill acceptance criteria	<ul style="list-style-type: none"> Remove the potential for free acceptance of contaminated soils. 	<ul style="list-style-type: none"> Create landfill acceptance criteria for clean fill material that ensures contaminated soils are not accepted. 	<ul style="list-style-type: none"> Reduce the potential for prosecution due to breach of landfill licence. Reduce the potential for future problems with soil and water contamination. Improved health and safety for landfill employees.
Clean fill landfill diversion	<ul style="list-style-type: none"> Increase landfill diversion. 	<ul style="list-style-type: none"> Provide a stockpile of clean fill that commercial and public users can utilise for free. Provision of a stockpile that can be used for landfill daily cover. 	<ul style="list-style-type: none"> Use of space at transfer station. Extend the life of the landfill. Accumulate sub soil for capping layers.

A clean fill gate fee needs to take into account the landfill operations requirement for clean fill in daily operations, therefore any system needs to encourage enough clean fill for daily operations. This can be

¹⁵ Not including clean fill

¹⁶ See <http://www.sustainability.vic.gov.au/www/html/1946-signs-for-transfer-stations-and-landfills.asp> for recommended signs.

done by allowing in free of charge disposal until the volume required is received before imposing the full gate fee or impose a lower gate fee.

Both systems have problems. The first provides issues in that some operators will be charged whilst other will not depending on timing, this may lead to stockpiling on building sites. The second system will need to have flexibility in the price for clean fill to ensure enough is received for daily operations, whilst not receiving too much.

It is noted that a number of landfills in Victoria utilise mulched green waste mixed with clean fill as daily cover. This provides a beneficial use for the green waste, however the increased organic matter into the landfill will cause greater generation of landfill gases as such this should be done when there is no clean fill available for capping material. It would be better for mulched greenwaste to be used in the final capping of the site.

Recommendation: It is recommended that the Council progressively implement each of the above identified improvement measures at its transfer stations.

4.3 CASTLEMAINE LANDFILL STRATEGY AND OPERATION

MASC currently uses Castlemaine Landfill for the disposal of garbage waste. The landfill is estimated to have used all available airspace by 2020. A review of Castlemaine landfill, its operation and future options for the site is summarised in the table below.

Table 4-3 Summary of MASC landfill operational issues and improvement measures.

Area of Concern	Issue	Improvement measures	Positives / Negatives
Castlemaine landfill life plan	<ul style="list-style-type: none"> Need to identify the life plan for Castlemaine landfill including current operation, future fill levels, final capping and post closure monitoring. 	<ul style="list-style-type: none"> Undertake full life plan for Castlemaine landfill including current operation, closure, rehabilitation and future options for the site. 	<ul style="list-style-type: none"> Provides MASC with clarity as to the plan for Castlemaine landfill. Identifies the full cost of the landfill post closure so that MASC can accrue this money from the landfill when it is operational. Provides an outline for the future of waste management in Castlemaine once the landfill is closed.
Comparison of a Local landfill against a Metropolitan Melbourne Landfill	<ul style="list-style-type: none"> Assessment of environmentally best and most cost effective landfill option for MASC. Identification of optimal use for remaining space at Castlemaine landfill. Potential need to begin process of identifying a new landfill location in MASC for when Castlemaine landfill closes. 	<ul style="list-style-type: none"> Undertake an assessment (a triple bottom line is recommended) over a 30 year period to identify the best long term garbage waste disposal option for MASC. Identify if it would be better to use the remaining space at Castlemaine landfill for a bulk haulage transfer station or to fill as a landfill. 	<ul style="list-style-type: none"> Clear strategy for waste disposal for MASC. Reduction of risk relating to the operation and rehabilitation of Castlemaine landfill. Environmental benefits from capture and utilisation of landfill gas at larger landfills. Larger landfill takes on the legacy risk of the waste. Potential for Metropolitan Melbourne landfills to increase gate fees significantly in the future. Increased haulage cost and environmental impact. Begin the process of identifying another landfill site which can take a long time.
Landfill daily	<ul style="list-style-type: none"> Consumption of 	<ul style="list-style-type: none"> Review the daily 	<ul style="list-style-type: none"> Extend life of the landfill.

Area of Concern	Issue	Improvement measures	Positives / Negatives
operations	landfill airspace by clean fill.	cover operations to understand if too much clean fill is being utilised.	<ul style="list-style-type: none"> Improved financial efficiency of landfill. Conservation of landfill airspace for future use.
Legacy landfill rehabilitation	<ul style="list-style-type: none"> Some legacy landfills need rehabilitation Cost of rehabilitation needs to be accounted for in future MASC budgets. 	<ul style="list-style-type: none"> Undertake a risk and rehabilitation assessment of former landfills within MASC. This should rank the sites by risk and estimate the cost of rehabilitating each landfill. 	<ul style="list-style-type: none"> Ability for Council to allocate cost for the rehabilitation of legacy landfills in future budgets. Potential for issues to arise as a consequence of a legacy landfill prior to proper rehabilitation. Greater understanding of potential risks posed by former landfills.

Recommendation: It is recommended that the Council progressively implement each of the above identified improvement measures at the Castlemaine Landfill.

4.4 KERBSIDE AND PUBLIC LITTER COLLECTION

Kerbside collection services are provided by MASC to 83.5% of households and a number of commercial properties in MASC. Public litter collections are provided in areas of high footfall across the Shire.

Table 4-4 *Summary of kerbside and public litter collection issues and improvement measures.*

Area of Concern	Issue	Improvement measures	Positives / Negatives
Default garbage collection bin	<ul style="list-style-type: none"> Achieve improved landfill diversion. 	<ul style="list-style-type: none"> Amend the current system so that an 80L MGB is the standard bin size and residents can opt to have a larger 140L MGB for an increased service charge. 	<ul style="list-style-type: none"> Smaller garbage bins are proven to reduce garbage waste arisings. Reduction in service charge for a large number of households. Difficulty in logistics of bin change and provision of bins. Potential cost for change of bins.
C&I kerbside waste collection service provision	<ul style="list-style-type: none"> Provide the same service across the Shire. To not compete with commercial waste collection operators. Prevent the storage and, if possible, collection of C&I waste from high footfall pedestrian areas. 	<ul style="list-style-type: none"> Remove all C&I kerbside waste collection services from MASC kerbside collection runs. Ensure that future waste collection from C&I properties is undertaken with health and safety and civic appearance in mind. 	<ul style="list-style-type: none"> Create parity of service levels to businesses across the Shire. Promote private waste services. Reduction in the number of bins on main shopping / footpaths causing a reduction in hazards and improved civic appearance.
Public Place Recycling	<ul style="list-style-type: none"> Improve landfill diversion. Improve recycling 	<ul style="list-style-type: none"> Provide PPR next to public litter bins in high footfall areas and key public waste areas (e.g. 	<ul style="list-style-type: none"> Improved landfill diversion. Increased community

Area of Concern	Issue	Improvement measures	Positives / Negatives
(PPR)	awareness.	picnic spots and town ovals). <ul style="list-style-type: none"> • Ensure that PPR and PLBs are clearly labelled and have different waste receptacle openings. (see figure below for an example). 	awareness of recycling. <ul style="list-style-type: none"> • Increased cost in litter collection due to increased bin lifts. • Reduction in cost of landfilling.

Recommendation: It is recommended that the Council progressively implement each of the above identified improvement measures for kerbside and public litter collection.

4.5 LOW POPULATION DENSITY WASTE SERVICES

MASC currently does not provide a kerbside waste collection service to a number of rural properties. These properties transport all of their waste direct to the transfer stations at Maldon and Castlemaine. This has led to a feeling of neglect among some rural households. It may also cause an increase in illegal disposal and backyard burning.

Analysis of the options available to Council to improve service coverage in low population density areas, whilst considering financial constraints is shown below.

Table 4-5 Review of rural waste service options

Option	Description	Key Points
Tip passes	Tip passes are provided to residents to enable the disposal of material to the transfer station facility without any direct cost at the transfer station.	<ul style="list-style-type: none"> • No financial incentive to divert waste from landfill. • Does not remove the need to travel to the transfer station. • Administration resources required to manage the service and to minimise sorting of the process can be significant. • Removal of gate fee income. • Funding of the system.
Part time manned skips	Fenced skips are provided in central locations within rural communities to act as mini transfer stations. The facility would be locked except for a few hours a week when a member of Council staff was present to charge a gate fee.	<ul style="list-style-type: none"> • Cost can be high as the facility needs to be manned, putrescible waste needs to be collected weekly and there is need for initial infrastructure construction. • Potential for members of the community to not be able to use the facility on the day it is open. • Unsupervised sites or sites with reduced supervision are difficult to manage, waste may be disposed of outside operating hours and inappropriate materials may also be dumped illegally. This has been evident in the past with sites such as Redesdale transfer station. • Potential for windblown litter, especially if material is deposited on the facility boundary.
Unsupervised locked skips	Lockable skips are provided to service a specific area. Each designated property is provided with a key to access the skip and skips are then serviced at regular intervals.	<ul style="list-style-type: none"> • Unsupervised sites or sites with reduced supervision are difficult to manage due to high potential for illegal dumping. This has been evident in the past with sites such as Redesdale transfer station. • Generally, the skips can be no bigger than 4.5 cubic metres as larger skips have wall heights that are too high to enable easy and safe disposal of waste.
Additional transfer	Construction of new transfer station facilities.	<ul style="list-style-type: none"> • The cost to establish a transfer station and the ongoing operational expenditure would be significant.

Option	Description	Key Points
stations		
Kerbside collection	Provision of kerbside waste collection across the Shire.	<ul style="list-style-type: none"> • There are high costs associated with this service. • A number of households cannot receive a kerbside collection service due to access issues. • Low efficiency of kerbside collection in low density areas.
Rural kerbside collection	Aggregations of MGBs provided to groups of rural households. MGBs located in an area where it is safe for vehicles to load and for collection vehicles. Aggregations of MGBs based near major transport routes for easy access.	<ul style="list-style-type: none"> • Cheaper to start up and operate. • Rural community provided with waste management facilities that are close by. • Use of MGBs should reduce the amount of illegal dumping due to the size of the bin and because the site is clearly not for hard or commercial waste. Clear signage stating this should be included. • Can provide garbage and recyclables bins. • Potential for 1 user to fill the bins. • Potential that the collection runs itself could be incorporated into a current kerbside collection round.
Maintain the current system	Maintain provision of Transfer Stations, at cost, to public.	<ul style="list-style-type: none"> • Current system in place. • Improved recycling rate can be achieved. • Facility manned at all times. • Distance to travel for the public. • No additional cost to council or Public.

Recommendation: It is recommended that the Council investigate and assess the relative merits and cost/benefits of each of the above options for providing waste collection services to those rural areas outside of the township areas which currently receive the Council's kerbside collection services.

4.6 GREEN WASTE AND KITCHEN ORGANICS

MASC currently does not collect kerbside green or kitchen organics. Transfer station users are encouraged to separate their green waste which is currently mulched on site and used in landfill operations. If the tonnages processed exceed 100 tonnes per month Council will be required to obtain an EPA works approval.

Table 4-6 Green waste and kitchen organics issues and improvement measures.

Area of Concern	Issue	Improvement measures	Positives / Negatives
Current organics waste treatment	<ul style="list-style-type: none"> Potential to spread invasive weeds. 	<ul style="list-style-type: none"> Ensure that green waste which is currently composted is not used off site. 	<ul style="list-style-type: none"> No licensed organics facility within 75km. Licensed facility would need 500m buffer from residential properties. Licensed facility would require a significant capital input. Need an end market for output material post treatment.
Regional organic waste treatment facility	<ul style="list-style-type: none"> Divert organic waste from landfill. 	<ul style="list-style-type: none"> Feasibility study into potential for a Regional organics processing facility. Support Regional efforts to develop organic waste treatment capacity. 	<ul style="list-style-type: none"> MASC do not produce enough green or kitchen waste to warrant the development of an organics treatment facility, currently, for the Shire alone. Would require Regional co-operation between Councils. Increased landfill diversion. Reduction in organic waste going to landfill reducing methane and other green house gas emissions. Improved resource recovery.
Provision of green waste or a kitchen and green waste kerbside collection service.	<ul style="list-style-type: none"> Increase diversion of green waste from landfill. 	<ul style="list-style-type: none"> Feasibility study into viable collection areas and systems for organic waste if a Regional organic waste treatment facility is identified. 	<ul style="list-style-type: none"> Inclusion of kitchen waste causes weekly collection to be required. Low participation and capture rates, causing reduced financial and environmental efficiency. Potential to create waste by diverting organic material from home composting to enter the waste collection system. Only viable if an organics facility is operating to accept waste arisings. Increased landfill diversion. Community would like service.
Provision of home composting bins or wormeries.	<ul style="list-style-type: none"> Waste reduction from collection. 	<ul style="list-style-type: none"> Review provision of home composting bins to rate payers in MASC for a reduced/nominal cost. 	<ul style="list-style-type: none"> Landfill diversion of organic waste. Not necessary to collect or transport waste. Potential to have cost but little benefit if households do not use. Potential cost of administration of bin sales and need to prevent roting of system.

Recommendation: It is recommended that the Council progressively implement each of the above identified improvement measures for green waste and kitchen organics issues.

4.7 HARD WASTE SERVICES

Hard waste is material that is too bulky or inappropriate for collection within the normal kerbside waste collection service. Common hard waste items include white goods (fridges, washing machines, etc.), furniture and mattresses. Council currently provides two transfer stations for the public to drop off such items and there is a desire among some in the community for a kerbside collection service. A review is provided of hard waste collection options in the table below.

Table 4-7 Review of hard waste collection options

Option	Description	Key Points
Roadside collection	The public is forewarned of a collection date when hard waste will be picked up and places all items that they desire to be collected at the front of their property on the kerbside for collection.	<ul style="list-style-type: none"> • Significant manual handling problems particularly for heavy or difficult to manage objects such as 'white goods' or furniture. • Materials left in unsafe locations can make access for collection difficult and create traffic hazards. • Scavengers tend to spread unwanted materials about which can cause hazard and amenity issues. • Hard waste collection does not include materials such as car tyres, bricks, rubble or hazardous products such as batteries and gas cylinders. Many of these would still need to be taken to the waste facility. • It would be difficult to advocate that this type of service be provided to one area of the Shire and not another. • Sustainability Victoria data indicates a relatively low yield per household of approximately 37Kg per household for this type of service.
Pre-book or "at call" pick up	Public call the Council to organise for hard waste to be collected from the easement in front of their property. The service can either be offered at no cost (based on 1 or 2 services per annum) or user pays.	<ul style="list-style-type: none"> • Pre-book hard waste collection has the same issues as the roadside pick up option. • The service is currently provided commercially by private contractors.
Tip passes	Tip passes are provided to households to enable the disposal of material directly to waste facilities.	<ul style="list-style-type: none"> • Provides no financial incentive for residents to sort materials into appropriate categories. • Residents may still need to travel a significant distance to dispose of material at a transfer station. • It is difficult in the first instance to determine the overall cost of providing this type of service, particularly if this was offered to all residents. • Would have a detrimental effect on the total revenue generated through landfill gate fees. • The administrative resources required to manage the service equitably and minimise sorting of the process can be significant. • It should also be noted that it is currently free to dispose of a number of recyclable materials including plastics, glass and metals.

Option	Description	Key Points
Monthly/ quarterly skip provision	Provision of a manned skip in rural locations of the Shire. Local households made aware of the skip arriving and invited to use the facility as they would a transfer station.	<ul style="list-style-type: none"> • Greater service provision to rural areas of the Shire. • Ability to charge a 'gate fee' for waste received. • High cost of operation due to transport and manning fees. • Health and safety issues for employees or public loading the skip. • Potential for illegal dumping in the location when the skip is not present.
Maintain the current system	Maintain the current provision of transfer stations at Castlemaine and Maldon for bulky waste that cannot go into kerbside collections.	<ul style="list-style-type: none"> • System currently in place. • Low cost of operation. • Low cost of administration. • Achieves a high level of waste segregation. • Greater control of materials deposited as facilities are fully manned.

Recommendation: It is recommended that the Council investigate and assess the relative merits and costs/benefits of each of the above options for providing hard waste collection services throughout the Shire.

4.8 REGIONAL ACCORDS AND CONTRACTS

Regional accords and contracts provide the potential for economic savings through economies of scale and the ability to achieve the volumes required for Advanced Waste Treatment (AWT) technologies to become feasible.

Table 4-8 Summary of Regional accords and contracts issues and improvement measures.

Area of Concern	Issue	Improvement measures	Positives / Negatives
Regional waste collection	<ul style="list-style-type: none"> • Potential financial savings. • MASC and a number of neighbouring Councils use the same service provider. 	<ul style="list-style-type: none"> • Ascertain willingness amongst neighbouring Councils for a regional waste collection contract. • Work with CRWMG to identify potential for regional co-operation. 	<ul style="list-style-type: none"> • Can provide savings through greater contractor competition at tender phase. • Can provide savings through contractor and MASC improved efficiency. • Often best to have a common kerbside collection service • May have to amend materials collected or collection times to ensure all parties are the same. • Management of the contract will be held within one council, this may not be MASC.
Regional Advanced Waste Treatment (AWT)	<ul style="list-style-type: none"> • MASC do not, currently, produce a viable volume of waste for cost effective development of an AWT facility. 	<ul style="list-style-type: none"> • Support regional development of AWT facility. 	<ul style="list-style-type: none"> • Any regional solution will have to be proved to be viable from an economic, environmental and social perspective. • Creation of an AWT should cause a significant reduction in waste sent to landfill. • Cost of AWT facility. • Procurement and financing complexities. • Potential reduction in the cost for waste handling at AWT facility.
Regional bulk haulage transfer station	<ul style="list-style-type: none"> • A lack of long term Regional landfill airspace means bulk haulage of garbage waste to Metropolitan Melbourne landfills may be required in the short to medium term. • Potential negative impacts of bulk haul to Melbourne may be offset by hauling greater volumes at higher densities. 	<ul style="list-style-type: none"> • Support Regional development of a transfer station with a bulk haulage capacity. • Include the concept into discussions regarding a Regional waste collection contract. 	<ul style="list-style-type: none"> • Development of such a facility will need to be proved from economic, environmental and social perspective. • Improved efficiency in waste haulage over larger distances. • Sharing of cost for the development of the facility. • Economies of scale within facility. • Optimal utilisation of transfer station would be achievable at higher tonnages. • Cost of construction and operation.

Recommendation: It is recommended that the Council progressively implement each of the above identified improvement measures for regional accords and contract issues.

4.9 WASTE EDUCATION

Waste education is increasingly recognised as an important method for ensuring optimal waste management within the community. It is targeted at all levels of the community from the Council to businesses to children at school, all of which have an important role in implementing the waste management goals of the Shire.

Table 4-9: Summary of waste education issues and improvement measures.

Area of Concern	Issue	Improvement measures	Positives / Negatives
Community Education	<ul style="list-style-type: none"> Currently provide minimal education 	<ul style="list-style-type: none"> Provide online educational material on MASC website; including materials collected and environmental and financial benefits of collection. Provide links to external websites providing more information on waste management and the benefits of waste reduction and recycling (e.g. Sustainability Victoria, EPA and DSE) 	<ul style="list-style-type: none"> Low cost to implement Provides clear information for all people and businesses in MASC Provides a cohesive picture of how MASC fits in at State and Federal Government level
Increased Kerbside Recycling	<ul style="list-style-type: none"> Known that 11.1% of garbage wastage could be recycled. Unknown how high the contamination rate is for recyclables bins 	<ul style="list-style-type: none"> Work with the kerbside collection contractor to provide an education programme for households that receive kerbside bin collection services. This could include flyers with households rate notices or fridge magnets. Review with kerbside collection operator potential to place tick or star stickers on bins for households that use the recyclables bin correctly over a given period. Provide other households with an information pack on what should be placed in which bin. 	<ul style="list-style-type: none"> Reduce contamination Increased recycling Increased landfill diversion More efficient use of the kerbside collection service Greater community understanding Small cost associated with the system
Schools Education	<ul style="list-style-type: none"> Unknown how many Schools are AuSSI¹⁷ certified in MASC 	<ul style="list-style-type: none"> Work with CRWMG to identify Schools that are AuSSI certified. Identify Schools that can become AuSSI certified and work with Regional Education Officer to implement programmes 	<ul style="list-style-type: none"> Low cost to implement Proven success in direct waste minimisation and for getting the waste education throughout the community.
Business Education	<ul style="list-style-type: none"> Unknown how many businesses in MASC are Waste Wise 	<ul style="list-style-type: none"> Work with CRWMG to identify businesses that are waste wise certified. Promote and facilitate uptake of waste wise certification by MASC businesses. 	<ul style="list-style-type: none"> Low cost to implement Proven success in direct waste minimisation and for getting the waste education throughout the community.

Recommendation: It is recommended that the Council progressively implement each of the above identified improvement measures for waste education.

¹⁷ AuSSI is the Federal Governments Australian Schools Sustainability Initiative specifically targeting schools as centres for waste minimisation and education.

4.10 LITTER AND ILLEGAL DUMPING

Littering and illegal dumping is a problem across Australia. There is the potential for the problem to increase further as waste costs increase to reflect the true environmental, social and economic cost of its management. It is important to ensure that the Council has a clear and transparent system for the tackling of the problem.

Table 4-10: Summary of Littering and illegal dumping issues and improvement measures.

Area of Concern	Issue	Improvement measures	Positives / Negatives
Littering	<ul style="list-style-type: none"> Unknown extent of general littering problem 	<ul style="list-style-type: none"> Need to measure the volume and weight of material currently collected as litter in MASC. 	<ul style="list-style-type: none"> Provide a basis to measure improvement in littering behaviour
Illegal dumping	<ul style="list-style-type: none"> Unknown extent of illegal dumping in MASC 	<ul style="list-style-type: none"> Need to co-ordinate with Crown land owners and Council illegal dumping collection crews to understand the extent of illegal dumping problems Need to identify key areas where illegal dumping is occurring 	<ul style="list-style-type: none"> Provide basis for monitoring illegal dumping and improving behaviour Co-ordinate actions with crown land owners Identify 'hot spots' where education might be required or a service might be needed Identify 'hotspots' where enforcement actions should be focused
Littering and Illegal dumping 'Hot Spots'	<ul style="list-style-type: none"> Review of service provision in these areas 	<ul style="list-style-type: none"> Review the provision of Public Litter Bins and Public Place Recycling in 'Hot Spot' areas to ensure that the service level matches the waste level. 	<ul style="list-style-type: none"> Potentially remove the issue through greater provision of PLBs and PPR.
Littering and Illegal Dumping education	<ul style="list-style-type: none"> Currently minimal education targeted at these areas 	<ul style="list-style-type: none"> Signs for former waste management facilities highlighting that they are closed and where the nearest facility can be found, include warning about illegal dumping and educational material on why dumping is illegal at that location and the financial, social and environmental impacts of it. Signs for town centres about not littering and potential penalties. 	<ul style="list-style-type: none"> Encourage a change in public behaviour regarding litter and illegal dumping.
State Government bodies	<ul style="list-style-type: none"> Identify State Government bodies to help with litter education programmes 	<ul style="list-style-type: none"> There is significant finance and skills available from State bodies to help MASC. Co-operation with the Victorian Litter Action Alliance and EPA is strongly recommended 	<ul style="list-style-type: none"> Benefit from State funding and expertise in tackling the problems of littering and illegal dumping.
Enforcement	<ul style="list-style-type: none"> Identify a system for the recording, investigation and where possible prosecution of illegal dumpers 	<ul style="list-style-type: none"> Co-ordinate with police and crown land owners to identify, investigate and prosecute incidents of illegal dumping. Where successful publicise the prosecution as much as possible 	<ul style="list-style-type: none"> Deterrent to future illegal dumpers

Recommendation: It is recommended that the Council progressively implement each of the above identified improvement measures for litter and illegal dumping issues.

5 ACTION PLAN

The Action Plan addresses the issues detailed throughout the WMS. The plan goals will be reviewed yearly, whilst the WMS and the plan will be reviewed in 5 years. Unless stated otherwise all of the actions are to be undertaken or managed by the Healthy Environments Unit.

Table 5-1 Action Plan

Future directions		Actions	Completion date
Contractor transfer station waste reporting	<ul style="list-style-type: none"> • Greater understanding of waste arisings across MASC. 	<ul style="list-style-type: none"> • Ask for breakdown of commercial and public figures to be reported in future for garbage, recyclables and organic waste. • Insert clause into future contracts requiring separate reporting of: <ul style="list-style-type: none"> - Commercial and public waste; and - Garbage, recyclables (by stream) and organic waste. 	<ul style="list-style-type: none"> • 01/06/2012 • Contract wording to be inserted in future contracts.
Contractor kerbside waste reporting	<ul style="list-style-type: none"> • Greater understanding of waste arisings across MASC. 	<ul style="list-style-type: none"> • Ask for breakdown of commercial and public figures to be reported in future for garbage and recyclables. • Insert clause into future contracts requiring separate reporting of: <ul style="list-style-type: none"> - Commercial and public waste; and - Garbage and recyclables tonnages - Recyclables contamination tonnages 	<ul style="list-style-type: none"> • 01/06/2012 • Contract wording to be inserted in future contracts.
Contract cost of facilities	<ul style="list-style-type: none"> • Identification of costs associated with specific waste infrastructure. 	<ul style="list-style-type: none"> • Request breakdown of contract costs for Castlemaine transfer station and Castlemaine landfill separately. • Ensure that future contracts require independent costing for each facility. 	<ul style="list-style-type: none"> • 01/06/2012 • Contract wording to be inserted in future contracts.
Transfer station	<ul style="list-style-type: none"> • Review of transfer stations against best practice guidelines. 	<ul style="list-style-type: none"> • Review the Maldon and Castlemaine transfer stations against Sustainability Victoria <i>'Guide to best practice at resource recovery and waste transfer facilities'</i>¹⁸. Where practicable undertake recommendations. 	<ul style="list-style-type: none"> • 01/06/2015
Transfer station	<ul style="list-style-type: none"> • Upgrade of transfer station signs to best practice standards 	<ul style="list-style-type: none"> • Ensure that signage used at the Maldon and Castlemaine transfer stations is in adherence with Sustainability Victoria guidance on best practice signage¹⁹. 	<ul style="list-style-type: none"> • 01/06/2011
Transfer station	<ul style="list-style-type: none"> • Provision of a clean fill collection area 	<ul style="list-style-type: none"> • Provision of a clean fill collection area where commercial or public users can collect clean fill for use off site. 	<ul style="list-style-type: none"> • 01/06/2011

¹⁸ Sustainability Victoria 'Guide to Best Practice at Resource Recovery Centres' September 2009 www.resourcesmart.vic.gov.au

¹⁹ See <http://www.sustainability.vic.gov.au/www/html/1946-signs-for-transfer-stations-and-landfills.asp> for recommended signs.

Transfer station	<ul style="list-style-type: none"> •Create acceptance criteria for clean fill 	<ul style="list-style-type: none"> •Create a system that removes the risk of accepting low level contaminated soils as clean fill material. •This can include requiring clean fill providers to certify that the material they are providing is not contaminated and a system of random sampling of clean fill provided. 	<ul style="list-style-type: none"> •Immediately
Transfer station	<ul style="list-style-type: none"> •Review the gate fee for clean fill material to reduce the cost incurred by MASC and reduces the volume of clean fill received. 	<ul style="list-style-type: none"> •Implement a gate fee for clean fill. Amend the clean fill gate fee to achieve both maximum reimbursement for the cost of landfilling and to ensure receipt of necessary quantities for the operation of the landfill. 	<ul style="list-style-type: none"> •Upon completion of review of clean fill tonnages (see below)
Transfer Station	<ul style="list-style-type: none"> •Review transfer station gate fees to ensure parity across the pricing schedule. 	<ul style="list-style-type: none"> •Undertake an analysis of the cost per tonne for the different pricing schedules used for different vehicle and trailer loads to ensure the cost per tonne (estimated) is the same for all load types. A recommended density per cubic meter of uncompacted MSW is 330kg/m³. It is recommended that this density be used as the basis for pricing for garbage loads received, unless MASC specific data is available. 	<ul style="list-style-type: none"> •01/02/2011
Castlemaine Landfill	<ul style="list-style-type: none"> •Review of clean fill tonnages 	<ul style="list-style-type: none"> •Review tonnage of clean fill received at the Castlemaine landfill to understand exactly how much is received. 	<ul style="list-style-type: none"> •01/06/2011
Castlemaine Landfill	<ul style="list-style-type: none"> •Review of daily operations 	<ul style="list-style-type: none"> •Review daily operations of Castlemaine landfill to ascertain how to reduce the volume of clean fill currently used for daily cover. 	<ul style="list-style-type: none"> •01/06/2011
Castlemaine Landfill	<ul style="list-style-type: none"> •Undertake a master plan for Castlemaine landfill 	<ul style="list-style-type: none"> •Identify the plan of action for Castlemaine landfill during operation, final fill levels, final capping, post closure monitoring and the use as a transfer station post closure. 	<ul style="list-style-type: none"> •01/06/2012
Castlemaine Landfill	<ul style="list-style-type: none"> •Undertake an assessment of local landfill viability against larger regional landfills. 	<ul style="list-style-type: none"> •Undertake a triple bottom line assessment of the environmental, economic and social benefits of landfilling within MASC against using a larger Metropolitan landfill. 	<ul style="list-style-type: none"> •01/06/2013

Castlemaine Landfill	<ul style="list-style-type: none"> •Begin identifying a site for a new landfill within MASC. 	<ul style="list-style-type: none"> •Initiate the process of identification of a site for the development of a landfill within MASC. 	<ul style="list-style-type: none"> •Immediately following the above action, if the author finds necessary.
Bulk haul transfer station	<ul style="list-style-type: none"> •Assess the viability of a transfer station for the compaction and bulk haulage of garbage to a metropolitan Melbourne landfill site. 	<ul style="list-style-type: none"> •Undertake a feasibility study for the development of a transfer station for the compaction and bulk haulage of waste to metropolitan landfills. •Assess if there is the potential to design such a transfer station at a Regional level or with at least one other Council and the impact of implementing a shared transfer station with the Council(s). 	<ul style="list-style-type: none"> •Either 2 years prior to the closure of Castlemaine landfill or if the local vs Metropolitan landfill identifies metropolitan landfills as best practicable option
Legacy Landfills	<ul style="list-style-type: none"> •Undertake a risk assessment and rehabilitation strategy for all legacy landfills in the Shire. 	<ul style="list-style-type: none"> •Undertake a risk assessment based upon environmental and human factors that will identify priority landfills for rehabilitation. •Assess the estimated cost per landfill for rehabilitation to EPA required standards. 	<ul style="list-style-type: none"> •01/06/2014
Kerbside collection	<ul style="list-style-type: none"> •Remove provision of service to commercial & industrial properties. 	<ul style="list-style-type: none"> •Remove provision of waste collection to C&I properties and rebate the service charge to the businesses. 	<ul style="list-style-type: none"> •When new kerbside collection contract is tendered.
Kerbside collection	<ul style="list-style-type: none"> •amend default size of garbage MGB 	<ul style="list-style-type: none"> •Amend the current system whereby households can request an 80lt MGB so that instead households can request a 140lt MGB and will otherwise receive an 80lt MGB. 	<ul style="list-style-type: none"> •Before new kerbside collection contract is tendered.
Rural collections	<ul style="list-style-type: none"> •Undertake a feasibility study for the provision of rural collections. 	<ul style="list-style-type: none"> •Investigation and assessment to be undertaken on the range of options identified in the Waste Strategy and a detailed report to be presented to Council on the costs and benefits of each option. 	<ul style="list-style-type: none"> •01/06/2012
Public Place Recycling	<ul style="list-style-type: none"> •Increase Public Place Recycling (PPR) provision 	<ul style="list-style-type: none"> •Provide PPR bins adjacent to PLBs in all high footfall areas across the shire. 	<ul style="list-style-type: none"> •Phased introduction completed by 01/06/2015
Regional co-operation	<ul style="list-style-type: none"> •Support efforts for a regional contract for the collection of kerbside waste 	<ul style="list-style-type: none"> •Council to actively support a regional waste collection contract. 	<ul style="list-style-type: none"> •Ongoing

Regional co-operation	<ul style="list-style-type: none"> Promote the development of a regional transfer station for the haulage of MSW to metropolitan landfills. 	<ul style="list-style-type: none"> Promote the development of a regional transfer station, if the bulk haulage transfer station study identifies this as the best practicable option. 	<ul style="list-style-type: none"> After the completion of the bulk haulage transfer station feasibility study.
Regional co-operation	<ul style="list-style-type: none"> Support provision of a regional organics processing facility 	<ul style="list-style-type: none"> Council to actively support a regional organics facility. 	<ul style="list-style-type: none"> ongoing
Green and kitchen organics collection	<ul style="list-style-type: none"> Council to review feasibility for kerbside collection of organics to support a regional organics processing facility. 	<ul style="list-style-type: none"> Council to undertake feasibility study for kerbside organics collection should a regional organics processing facility become viable. 	<ul style="list-style-type: none"> Commence once an organics waste treatment facility is available locally that will contractually receive the material.
Hard waste	<ul style="list-style-type: none"> Council to review feasibility for providing hard waste collection services throughout the Shire. 	<ul style="list-style-type: none"> Investigation and assessment to be undertaken on the range of options identified in the Waste Strategy and a detailed report to be presented to Council on the costs and benefits of each option. Council to decide whether to maintain the current service or whether to introduce a higher level of service following consideration of the above report. 	<ul style="list-style-type: none"> 01/02/2012
Waste education	Community education	<ul style="list-style-type: none"> Provide online educational material on MASC website; including materials collected and environmental and financial benefits of collection. Provide links to external websites providing more information on waste management and the benefits of waste reduction and recycling (e.g. Sustainability Victoria, EPA and DSE) 	<ul style="list-style-type: none"> 01/06/2011 Ongoing action to ensure is correct throughout the 5 year period.
Waste Education	Increased kerbside recycling	<ul style="list-style-type: none"> Work with the kerbside collection contractor to provide an education programme for households that receive kerbside bin collection services. This could include flyers or fridge magnets with household rate notices. Review with kerbside collection operator potential to place tick or star stickers on bins for households that use the recyclables bin correctly over a given period. Provide other households with an information pack on what should be placed in each bin. 	<ul style="list-style-type: none"> Ongoing action to be undertaken throughout the 5 year period

Waste Education	Schools Education	<ul style="list-style-type: none"> • Work with CRWMG to identify Schools that are AuSSI certified. • Identify Schools that can become AuSSI certified and work with Regional Education Officer to implement programmes 	<ul style="list-style-type: none"> • Encourage AuSSI schools program uptake in: <ul style="list-style-type: none"> - 25% of schools by 01/06/2012 - 50% of schools by 01/06/2013 - 75% of schools by 01/06/2014 - 100% of schools by 01/06/2015
Waste Education	Business education	<ul style="list-style-type: none"> • Work with CRWMG to identify businesses that are waste wise certified. • Promote and facilitate uptake of waste wise certification by MASC businesses. 	<ul style="list-style-type: none"> • 01/06/2012 • Ongoing action from 2012 to promote waste wise with CRWMG to businesses.
Litter and illegal dumping	<ul style="list-style-type: none"> • Measurement of litter problem in MASC, both general street litter and illegal dumping 	<ul style="list-style-type: none"> • Measure the volume and weight of material currently collected as litter in MASC. • Ensure reporting of street and path sweeping monthly and annually • Ensure reporting of Illegal dumping litter collection monthly and annually 	<ul style="list-style-type: none"> • 01/06/2011
Litter and illegal dumping	<ul style="list-style-type: none"> • Co-ordination on illegal dumping with other key players • Identify key areas of illegal dumping within MASC 	<ul style="list-style-type: none"> • Co-ordinate with Crown land owners and MASC Council illegal dumping collection crews to understand the extent of illegal dumping problems • Identify key areas where illegal dumping is occurring 	<ul style="list-style-type: none"> • 01/06/2012

Litter and illegal dumping	<ul style="list-style-type: none"> •Ensure illegal dumping is not due to service provision levels. 	<ul style="list-style-type: none"> • Review the provision of PLBs and PPRs in 'hot spot' areas to ensure that the service level matches the waste level. 	<ul style="list-style-type: none"> •01/06/2013
Litter and illegal dumping	<ul style="list-style-type: none"> •Littering education •Targeting of known 'hot spot' areas with illegal dumping education 	<ul style="list-style-type: none"> • Erect signs at former waste management facilities²⁰. • Erect signs in town centres about not littering and the penalties that apply if caught. 	<ul style="list-style-type: none"> •01/06/2011
Litter and illegal dumping	<ul style="list-style-type: none"> •Co-ordination with State bodies 	<ul style="list-style-type: none"> • Contact State Government bodies including the Victorian Litter Action Alliance and EPA about how they can help MASC achieve its goals of litter and illegal dumping reduction and enforcement. 	<ul style="list-style-type: none"> •Ongoing. It is recommended this is done immediately and cooperation is maintained continuously.
Litter and Illegal dumping	<ul style="list-style-type: none"> •Enforcement 	<ul style="list-style-type: none"> • Co-ordinate with police and crown land owners to identify, investigate and prosecute incidents of illegal dumping. • Where successful publicise the prosecution as much as possible. 	<ul style="list-style-type: none"> •Ongoing.

²⁰ These signs should contain information such as where the nearest facility can be found, a warning about illegal dumping and educational material on why dumping is illegal. Highlight potential penalties that apply.

6 REFERENCES

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**APPENDIX A KEY FEDERAL AND STATE LEGISLATION AND
POLICIES AND OTHER INITIATIVES**

KEY FEDERAL AND STATE LEGISLATION AND POLICIES

6.1 KEY FEDERAL LEGISLATION AND POLICIES

6.1.1 National Waste Policy

The National Waste Policy heralds a new, coherent, efficient and environmentally responsible approach to waste management in Australia. The policy, agreed by all Australian Environment Ministers in November 2009, sets Australia's waste management and resource recovery direction to 2020.

The policy sets directions in six key areas and identifies 16 priority strategies that would benefit from a national or coordinated approach. These strategies will provide focus to the work across individual jurisdictions, build on current directions and complement existing activity. They will also provide clarity and certainty for business and the community.

The six key areas are:

1. **Taking responsibility-** Shared responsibility for reducing the environmental, health and safety footprint of products and materials across the manufacture-supply-consumption chain and at end-of-life.
2. **Improving the market-** Efficient and effective Australian markets operate for waste and recovered resources, with local technology and innovation being sought after internationally.
3. **Pursuing sustainability-** Less waste and improved use of waste to achieve broader environmental, social and economic benefits.
4. **Reducing hazard and risk-** Reduction of potentially hazardous content of wastes with consistent, safe and accountable waste recovery, handling and disposal.
5. **Tailoring solutions-** Increased capacity in regional, remote and Indigenous communities to manage waste and recover and re-use resources.
6. **Providing the evidence-** Access by decision makers to meaningful, accurate and current national waste and resource recovery data and information to measure progress and educate and inform the behaviour and the choices of the community.

The National Waste Policy Implementation Plan was endorsed by the Environment Protection and Heritage Council on 5 July 2010. The implementation plan identifies priority initiatives and milestones, presents the governance arrangements that will support the Environment Protection Authority and Heritage Council and sets out how progress will be tracked and performance monitored.

The implementation plan will be regularly updated as initiatives are scoped, consultation occurs, initiatives are completed and new work is agreed.

The National Waste Policy sets the direction for Australia over the next 10 years to produce less waste for disposal and manage waste as a resource to deliver economic, environmental and social benefits.

The National Waste Policy establishes a comprehensive work program for national coordinated action on waste across six key areas:

1. Reducing hazard and risk;
2. Tailoring solutions;
3. Providing the evidence;
4. Taking responsibility;
5. Improving the market; and
6. Pursuing sustainability

6.1.2 National Initiatives

National Packaging Covenant

The new Australian Packaging Covenant (APC) is a voluntary initiative by government and industry to reduce the effects of packaging on the environment. The covenant provides a comprehensive list of commitments that signatories should consider when developing required action plans with regard to packaging.

The new Australian Packaging Covenant (APC) commenced on the 1st July 2010. The new APC focuses on improved packaging design, away from home recycling, litter reduction and increased engagement across the supply chain through product stewardship. An important element of the APC is the Sustainable Packaging Guidelines (SPG) which have been developed to assist signatories to review and optimise their packaging.

The Covenant establishes a framework for the effective life cycle management of consumer packaging and paper products that will be delivered through a collaborative approach. It aims to achieve, with the help of all participants, a recycling target of 65% for packaging and no further increases in packaging waste disposed to landfill by the end of 2010.

Companies, Government Agencies and Industry Associations sign the Covenant and commit to certain responsibilities which contribute to achieving the Covenant Performance Goals and KPI's. Anyone involved in the packaging supply chain is invited to sign the Covenant.

All signatories to the Covenant recognise that a co-operative approach between industry and all spheres of government is essential to achieving national consistency in the lifecycle management of packaging and paper and the implementation of sustainable kerbside collection systems.

6.2 KEY STATE POLICIES AND INITIATIVES

6.2.1 Towards Zero Waste Strategy

The Sustainability in Action: Towards Zero Waste Strategy (TZW) was developed in-line with the EP Act. The objectives of TZW are to reduce and recover solid waste, and to reduce the environmentally damaging impacts of waste.

The strategy sets out the overall Environmental Sustainability Framework and state waste recovery targets for Sustainability Victoria (SV), the Environment Protection Authority (EPA), Regional Waste Management Groups and Local Government with regard to solid waste management in Victoria.

Some of the TZW targets are:

- Reduce the amount of waste generated by 1.5 million tonnes per annum by 2014, compared to 2002/03.
- Increase the recovery rate in all solid waste generated from the current 48% (2003) to 75% by 2014 comprising:
- 65% recovery rate (by weight) of MSW for reuse and recycling by 2014. An interim target of 45% recovery rate is established for 2008-09;
- 80% recovery (by weight) of (C&I) solid waste for reuse and recycling by 2014. An interim target of 65% is established for 2008-09; and
- 80% recovery rate (by weight) of (C&D) solid waste for reuse and recycling by 2014. An interim target of 65% is established for 2008-09.
- 25% reduction in littering behaviour compared with 2003 levels

Sustainability Victoria (SV) released a progress report in 2006-07 which indicated that recovery of C&I and C&D waste were on track to meet the TZW recovery targets (see Table 1 below). To meet the 65% target for MSW recovery more significant change is required, particularly with the recovery of green organics. It is expected that metropolitan councils and some larger regional councils will have to

exceed the 65% MSW diversion target if the State wide target is to be met. In effect the target of metropolitan councils is therefore 70%.

Table 1.6-1 Waste Recovery in Victoria

	Actual	TZW Recovery Targets	
	2006-07	2008-09	2013-14
MSW (Metro Melbourne)	41% (43%)	45%	65%
C&I waste	68%	65%	80%
C&D waste	71%	65%	80%

6.2.2 Victorian Advanced Resource Recovery Initiative (VARRI)

To support the implementation of the Strategic Plan and new initiative VARRI was instigated by the State Government to facilitate the development of ARRT facilities in metropolitan Melbourne. The incorporation of ARRT facilities into waste management practices in Victoria could significantly increase the quantities of material recovered from the waste stream, particularly garden and food organic material which currently make up a large proportion of waste disposed to landfill. The aim is to have two ARRT facilities well advanced by 2010.

The WMS of councils will need to be reviewed in light of the project's recommendations.

6.2.3 Solid Industrial Waste Management Plan

The Solid Industrial Waste Management Plan was developed to establish goals and targets for solid waste management (e.g. C&I and C&D waste) in Victoria. The outlined goals of the plan include:

- To increase materials-use efficiency and reduce waste generation
- To increase the sustainable recovery of materials for recycling and reprocessing; and
- To reduce the environmentally damaging impacts of waste.

The key targets are:

- Reduce the quantity of waste generated by 1.5 million tonnes by 2013;
- 65% recovery rate in SIW by July 2008 (towards an 80% rate by 2013);
- Reducing greenhouse emissions, litter and toxic materials in the waste stream.

Waste from households and Council activities are classified as municipal waste and are not addressed in this plan. However, it does include household waste delivered by a commercial operator.

6.3 OTHER WASTE ISSUES OR INITIATIVES

Eco-Buy Program

Eco-buy is an initiative funded by the Department of Sustainability and Environment (DSE) and Sustainability Victoria (SV), which encourages the purchasing of environmentally preferable products and services. Both State and Local Governments have incorporated Eco-buy recommended products for internal purchasing, demonstrating the commitment of government in attaining a more sustainable future.

Discussion of Current and Future Disposal Cost / Levies

Landfill levies have increased since their inception in 2001 from \$ 4 / tonne for both municipal waste and industrial waste to \$9 / tonne and \$15 / tonne for municipal and industrial waste respectively.

Landfill levies are likely to increase further as Victorians moves towards favouring resource recovery rather than disposal to landfill. Such an increase will result in higher costs at the landfill gate.

Other EPA Policy Initiatives

The following activities are planned over the next 12 months by the EPA:

1. Impact strategy study on banning organics to landfill – detailed assessment to be conducted;
2. Input to the landfill levy development – new legislation being developed by DSE;
3. Publication 508 - Organic regulations and guidelines reviewed;
4. Develop regulations and guidelines for future ARRTs; and
5. Review Landfill BPEM.

Note. This WMS may need to be reviewed in light of these activities.

Contamination – Problematic Waste Items

Separation of waste materials at source (e.g. using separate bins at home) is fundamental to promoting cost-effective resource recovery and processing. Separation by the resident helps to reduce the labour and energy required to sort materials and manage contamination at processing sites. Comprehensive education programs about the appropriate use of the kerbside system are required to improve kerbside collections by reducing inappropriate disposal of potentially hazardous materials and items that damage processing infrastructure and end-product markets. Contamination can also pose health and safety risks for collectors and processors and cause equipment damage.

Problematic waste items include plastic in green waste, non-recyclable plastics such as meat containers, hazardous materials such as batteries in recyclables bins and clinical waste such as needles and syringes.

Occupational Health and Safety

There have been significant OH&S issues identified with the kerbside collection of waste, as a result Workcover has identified the industry as posing a high risk to employee health and safety. Occupational Health and Safety Guidelines for the Collection of Domestic and Commercial Non-Hazardous Waste and Recyclable Materials were released in 2003.

The OH&S issues addressed in the guidelines include:

- A 'No-Lift' approach to the handling of containers;
- A 'No-Riding on the outside of vehicles' approach to prevent serious injuries and fatalities;
- A 'No-work at heights' approach except in workshops or by fully equipped service crews; and
- Compliance with OH&S legislative requirements.

Kerbside collection systems that require manual lifting have been replaced with mechanical collection trucks. Hard waste collections still pose an employee and community risk, particularly if waste is required to be left on the nature strip in the front of residential properties

Worksafe Victoria have developed a handbook titled *Safe Collection of Hard Waste*, November 2008, that provides information on how to safely collect domestic hard waste and bundled green waste applying a risk management approach to address specific hazards. The handbook states that "Councils and collectors need to assess their own circumstances and apply the safest collection practice".

Product Stewardship Programs

By taking responsibility for the end-of-life cycle of products and materials, the environmental impacts associated with those materials can be significantly reduced. Producers, users and consumers share

the responsibility from design and manufacture to use and end-of-life management. The Federal and State Governments have both introduced initiatives for product stewardship schemes.

The Federal Government has product stewardship initiatives for:

- Degradable plastics;
- Oil;
- Tyres; and
- PVC

E-waste has been identified as a national priority waste due to the significant quantities being produced and the hazardous nature of the waste. The inclusion of televisions and computers in the product stewardship initiative is currently being developed by the Federal Government. Local government is a key stakeholder in management of e-waste. Much of this material is placed out for council hard waste collection. This mode of collection is likely to continue as part of any new scheme.

Council supports proposals for a product stewardship scheme and seeks to ensure that its role in the full life cycle management of e-waste is recognised and appropriately resourced with any national initiative.