



Waste Management and Services Strategy

2018 - 2027

Our Vision

**Deliver financially
and environmentally
sustainable waste
services.**

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Mayor's message



Welcome to the Moira Shire Council's Waste Management and Services Strategy. Council is committed in bringing about positive change in the way we view and manage waste.

A strategic approach has been developed as

described in the Waste Management and Services Strategy 2018-2027.

The strategy will provide guidance for Council to work towards its long term vision of delivering financially and environmentally sustainable waste services.

We have a strong track record of providing better or best practice waste services. Significant achievements are highlighted in the standalone Waste Management Achievements Report 2017 which is an appendix to this strategy.

In recent years some of our major achievements include the award-winning kerbside organics service, major rehabilitation of landfill cells, free mulch days and the Waste Management in Moira app. All of these projects highlight our commitment to high quality service delivery.

Looking forward there are five key objectives to the Waste Management and Services Strategy 2018-2027. The five objectives include:

1. to operate compliant and, where possible, best practice waste management sites;
2. that our waste sites meet the needs of Council, our community and commercial customers;
3. to maximise the life span of the Cobram landfill through diversion and recycling activities;
4. the ongoing review of our waste services to improve the efficiency and quality of service delivery; and
5. financial allocations reflect service users and complete costs of waste service provision.

Council is committed to minimising the amount of waste we generated; reducing the environmental impacts of waste generation and disposal; providing a cost effective service to ratepayers and providing the necessary infrastructure and service to support economic development in the Moira Shire.

We look forward to continuing to work with our partners and the broader community to implement this strategy.

It is my pleasure to endorse this strategy on behalf of my fellow Councillors.

A handwritten signature in black ink that reads 'Libro Mustica'. The signature is written in a cursive style.

Cr Libro Mustica
Mayor, Moira Shire Council
 July 2017

Introduction

The Moira Shire Waste Management and Services Strategy (WMSS) guides the delivery of all waste services provided by Council. The WMSS aims to sustainably meet the needs of the community and align with state and regional waste priorities.

The WMSS considers the environmental, social and financial impacts of Councils waste management. A number of recommendations are made to guide Councils waste management activities and services into the future.

Vision and guiding principles

This WMSS vision is for Moira Shire to:

Deliver financially and environmentally sustainable waste services.

The following principles have guided the development of the WMSS:

- maximising the life span of Cobram landfill (through a variety of resource recovery activities);
- fees and charges incorporate full lifecycle costs;
- user pays principles will apply;
- resource recovery is more sustainable than landfill;
- Council delivers quality services to the community;
- rehabilitation obligations (including future and legacy facilities) are self-funded through waste service income rather than municipal rates;
- environmental, social and financial impacts are considered in decision making; and
- Councils activities need to be compliant with requirements and aligned with the broader waste sector.

Environmental, social and financial considerations

The strategic options identified in the WMSS have been developed within the framework of environmentally sustainable development. This incorporates:

- minimising the amount of waste generated;
- minimising the amount of greenhouse emissions generated;
- reducing the environmental impacts of waste generation and disposal;
- unintended consequences (illegal dumping) are considered in decision making;
- providing a cost-effective level of service to ratepayers; and
- providing the necessary infrastructure for future economic development in the Moira Shire.

Policy context

State Government

In 2014 the *Environment Protection Act (1970)* (EP Act) was reviewed and the Victorian Waste and Resource Recovery Infrastructure Planning Framework was established. This framework is to:

- effectively manage the expected mix and volumes of waste;
- reflect the principles of environmental justice to ensure that impacts on the community, environment and public health are not disproportionately felt across communities;
- support a viable resource recovery industry; and
- reduce the amount of valuable material going to landfill.

Additionally the EPA and Sustainability Victoria have produced a range of best practice guidelines including:

- Best Practice Environmental Guidelines for the Siting, Design, Operation and Rehabilitation of landfills 2001 (BPEM);
- Best Practice Environmental Guidelines for Reducing Green House Gas Emissions from Landfills and Wastewater Treatment Facilities 2000; and
- Guide to Better Practice at Resource Recovery Centres (May 2017).

Council strives to be compliant with the best practice guidelines. However, Council acknowledges with a number of our small, rural facilities full compliance is difficult to achieve.

In 2015 the Victorian Government released the Statewide Waste and Resource Recovery Infrastructure Plan (SWRRIP). The purpose of the SWRRIP was to “provide Victoria with the long term vision and roadmap to guide future planning for waste and resource recovery infrastructure”. The SWRRIP defines four goals that will be achieved through actioning the following six long term strategic directions:

1. Priorities viable recovery;
2. Reduce landfill reliance;
3. Aggregate materials;
4. Utilise land;
5. Evidence-based decision making; and
6. Integrated planning.

A requirement of the EPA Act is for the regional waste and resource recovery groups to prepare a plan for meeting regional infrastructure needs over at least the next 10 year period. Moira Shire is a member of the Goulburn Valley Waste and Resource Recovery Group (GVWRRG) which has prepared the ‘Goulburn Valley Waste and Resource Recovery Implementation Plan 2016’.

There are five strategic objectives for the GVWRRG Implementation Plan that are based on the principles of the EPA Act and aligned to the strategic directions of the state infrastructure plan (Table 1).

Moira Shire

In April 2006 Council approved its inaugural Waste Management Business Plan. This Plan has provided direction to Council in relation to all aspects of waste management. This Business Plan has been reviewed a number of times, most recently in 2009.

Significant progress has been made in delivering on this Business Plan. A summary of progress is documented in the Waste Management Achievements Report 2017 (Appendix 1).

In 2017 Council endorsed its new Council Plan 2017-2021. Strategy 3 (of 4) of this Plan is "A Clean Green Environment". This Strategy contains waste specific goals, strategic actions and performance indicators.

In 2017 Council reviewed and renewed its Environment Sustainability Strategy. This review identified the following seven focus areas:

1. Environmentally accountable Council;
2. Community engagement;
3. Partnerships;
4. Climate change adaptation and mitigation;
5. Conservation of biodiversity;
6. Sustainable management of water; and
7. Sustainable management of waste.

Delivering the WMSS is important in a number of these focus areas.

Objectives

Based on the vision and guiding principles outlined above the WMSS has five key objectives. Each objective has a number of recommendations. The Objectives align with the state and regional directions listed in Table 1.

Table 1: Alignment of State and Regional directions and objectives

State-wide waste and resource recovery infrastructure plan goals				
Landfills will only be for receiving and treating waste streams from which all materials that can be viably recovered have been extracted	Materials are made available to the resource recovery market through aggregation and consolidation of volumes to create viability resources from waste.	Waste and resource recovery facilities including landfills are established and managed over their lifetime to provide best economic, community, environment and public health outcomes for local communities and the state and ensure their impacts are not disproportionately felt	Targeted information provides the evidence base to inform integrated state-wide waste and resource recovery infrastructure planning and investments at the state regional and local levels by industry, local government resource recovery	
GV Regional strategic objectives				
To maximise the diversion of recoverable materials from landfills	To support increased resource recovery	To achieve quantities for reprocessing	To manage waste and materials streams	To maximise economic outcomes in the delivery of region wide network of waste and resource recovery infrastructure
Moira Shire Strategy Objectives				
1. Operate compliant, and where possible best practice waste management facilities				
			✓	✓
2. Cobram landfill meets the needs of Council, our community and commercial customers				
✓	✓	✓	✓	✓
3. Maximise the life span of the Cobram landfill through resource recovery and recycling activities				
	✓	✓	✓	✓
4. Ongoing review of Councils waste services to improve the efficiency and quality of service delivery				
				✓
5. Financial allocations reflect service users and complete costs of waste service provision				
✓	✓	✓	✓	✓

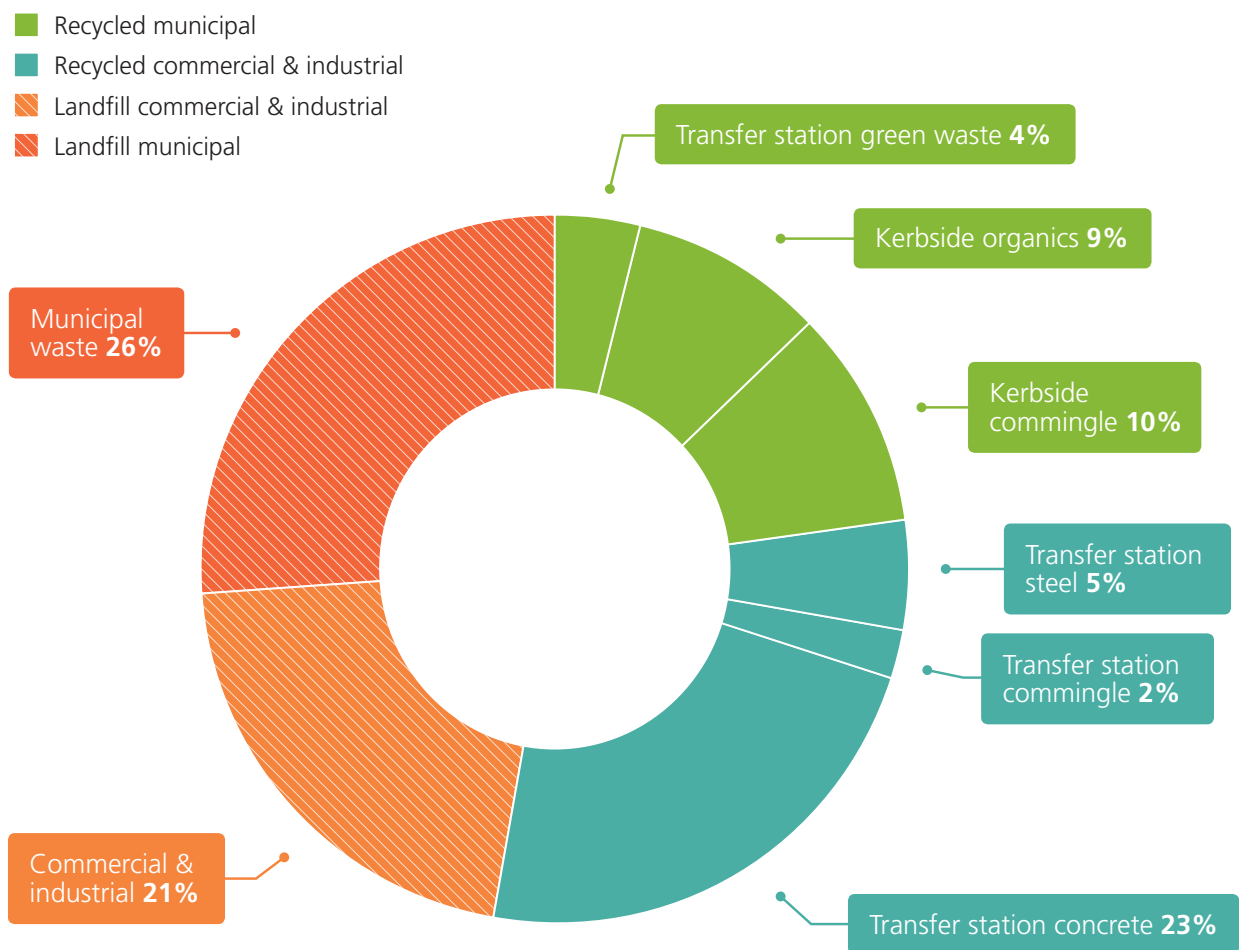
Overview

Waste profile

Council operates a landfill at Pye Road Cobram. In addition to the landfill Council also operates nine transfer stations throughout the shire. The waste profile taken to these facilities (transfer stations and landfill) is shown in the following graphs.

Figure 1 shows 53% (represented as green) of material presented to a Moira Shire waste facility is diverted from landfill. A significant component (21%) of the material to landfill is from the 'Commercial and Industrial' waste stream which is a waste stream Council currently has a limited capacity to directly influence.

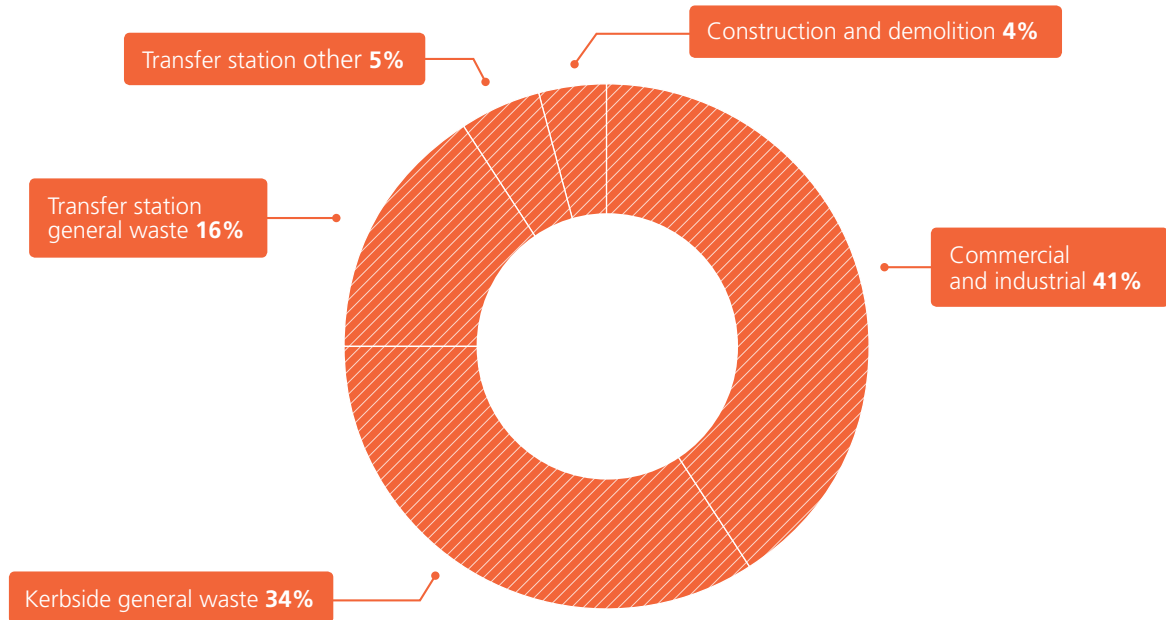
Figure 1: Breakdown (%) of material received at Moira Shire's waste facilities



Note: Figure 1 combines Commercial and Industrial and Construction and Demolition waste streams

Figure 2 illustrates the source of the waste that is disposed of in the Moira Shire landfill.

Figure 2: Origin of waste that is disposed of in the Cobram Landfill



In December 2014 Council introduced a kerbside organics collection service to approximately 75% of residential households in the Shire. This complemented the existing kerbside recycle and waste services. Research undertaken for the Department of Environment and Energy (Australian National Waste Report 2016) found that waste generation, particularly of municipal waste, is closely linked to population size. This report notes

that “other things being equal, more population means more waste”. Figure 3 demonstrates that since the introduction of the kerbside organic service, the absolute amount of kerbside municipal waste disposed of to landfill is showing a decreasing trend. This is a very positive result, particularly since the number of bins, indicating households (and population) serviced, has increased (Table 2).

Figure 3: Tonnes of Municipal Waste to Landfill

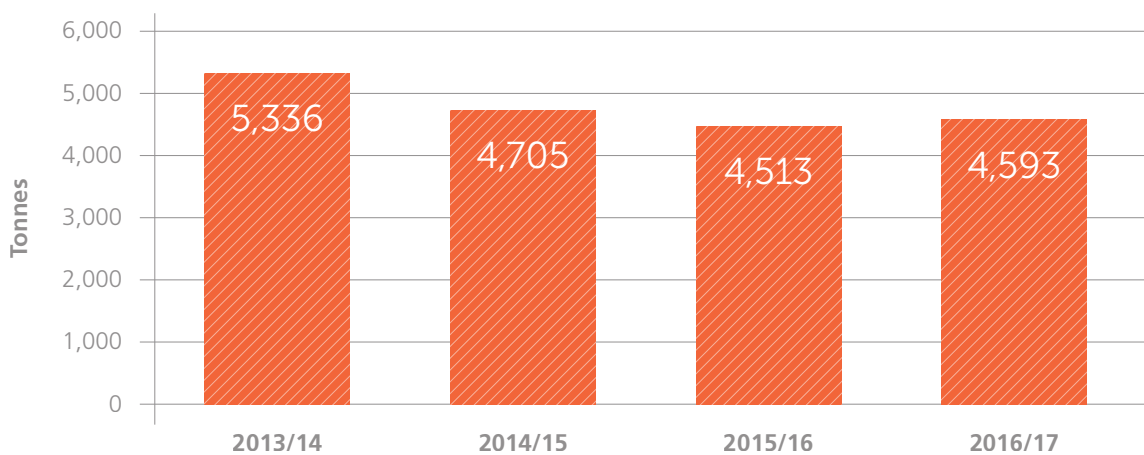


Table 2: Number of bins receiving a kerbside municipal waste service

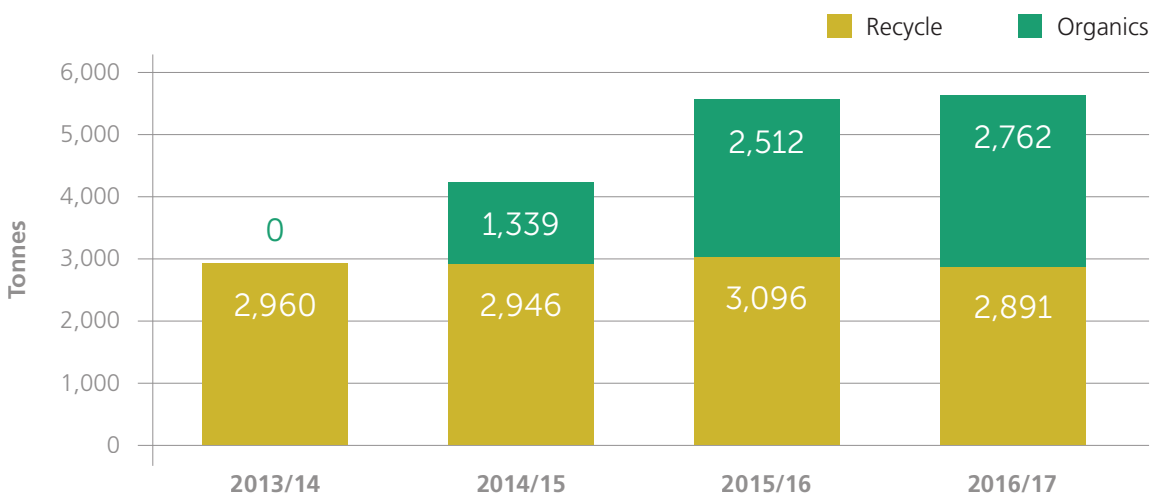
Year	Municipal Waste Bins	Increase in Number of Bins
2012	12,425	-
2013	12,641	216
2014	12,824	183
2015	13,067	243
2016	13,343	276
2017	13,739	396
Total increase (5 year)		1,314

Figure 4 demonstrates the resource recovery that occurs via kerbside collections. Figures 3 and 4 demonstrate that since the implementation of the kerbside organic service, total kerbside resource recovery (organics and recyclables) has become greater than kerbside waste.

Figure 4 also demonstrates the kerbside organic service was a successful customer service initiative. The number of tonnes disposed of through the kerbside organics service was greater than the decrease in tonnes to Municipal Waste.

In addition to the successful uptake of the kerbside organic service in terms of tonnes diverted, Moira Shire has reset the national benchmark for organics contamination. As at 31 December 2017 the community of Moira Shire has achieved an average contamination rate of 0.45%, by far exceeding the previous national best practice benchmark of 1%.

Figure 4: Kerbside resource recovery



Cobram landfill capacity and lifespan

The Cobram landfill is located at Pye Road Cobram (Figure 5). The site is 47 hectares in total. It has eight constructed cells, with planning approvals and provision for four 'future cells'. The eight constructed cells are in various stages within their life cycle as presented in Table 3. It is assumed that all cells have a capacity of approximately 80,000m³ which equates to a life expectancy of 4 to 5 years.

Waste generation projections indicate that the currently constructed cells of Moira Shires Municipal Landfill should have sufficient capacity to service the Shire for at least the next 20 years.

This is based on:

- revised site layout of future cells;
- average filling time frames; and
- population projections.

Over recent years the life of the Cobram landfill has been extended significantly. This is due to two factors:

1. increased resource recovery; and
2. improved site management including compaction ratios and use of cover.

Figure 5: Layout of the Cobram Landfill

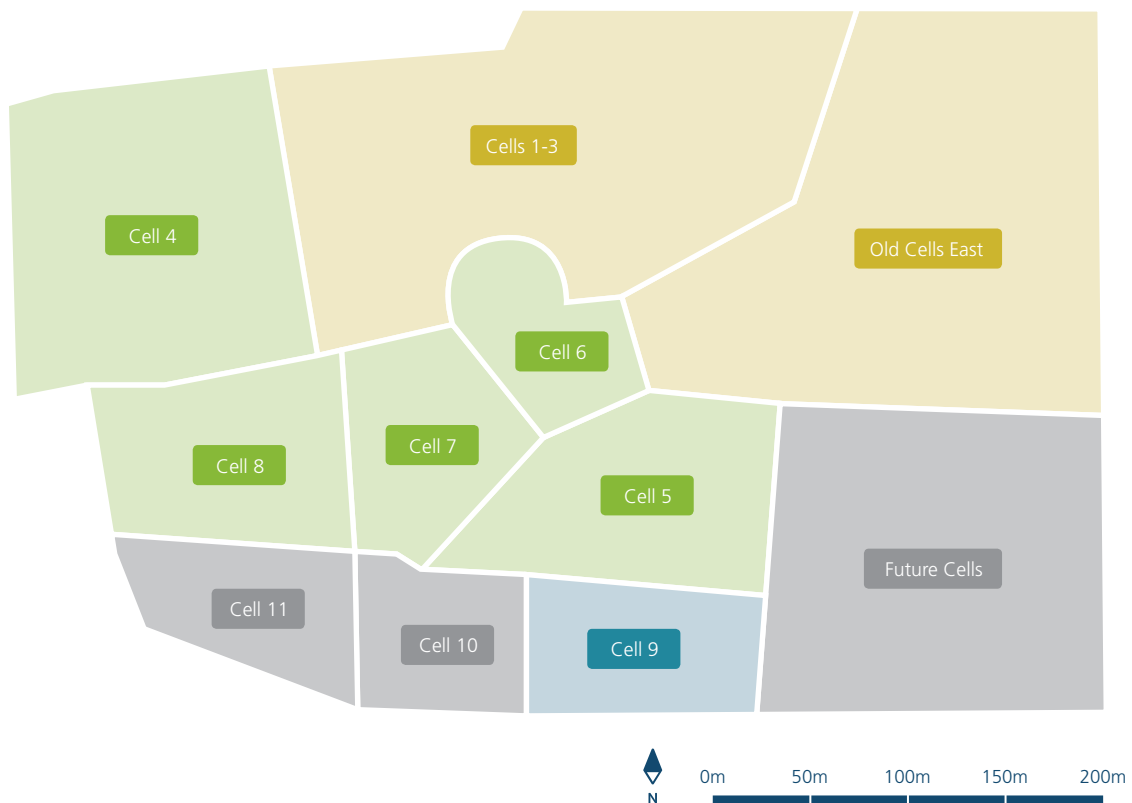


Table 3: Cobram Landfill life cycle stages

Cell	Old Cells East	1-3	4	5	6	7	8	9	10	11	Future cells (4)	
Stage	Closed After care management		Active					Design				

Projected waste generation

For the purpose of modelling, waste generation is assumed to be flat. This is evidenced by our historical data (Figure 4) and supported by Moira Shire:

- having a low population growth (Table 4); and
- continuing efforts to improve efficiencies and opportunities for resource recovery.

Under the current SWRRIP the Cobram landfill is classified as a regional hub. Under the current SWRRIP when the Cobram landfill reaches its full capacity Moira Shire will not be granted a licence to develop a new landfill.

Therefore it is critical that through management practices the lifespan of the Cobram landfill is maximised. The value of having a council operated landfill is:

- it provides cost effective waste management for the community, businesses and the Shire;
- it provides an income stream to contribute to the operational and capital requirements of Council's waste facilities, including their rehabilitation and subsequent (30 year) compliance requirements;
- it reduces the cost of travel related waste expenses; and
- the landfill employs approximately four full time staff locally.

Population projection

Table 4 shows the projected population of Moira Shire to 2031. This was taken from the 2014 Department of Environment, Land, Water and Planning (DELWP) report 'Victoria in the Future – Population and Household Projections' which based projections on the 2011 Census data.

Table 4: Current and future population projections for Moira Shire

Year	Population
2016	29,155
2021	29,944
2026	30,791
2031	31,665

Looking ahead

The following section of the WMSS is structured around five objectives. These objectives will be used to guide Council's actions in working towards achieving our vision.

The objectives are:

Objective 1

Operate compliant and, where possible, best practice waste management facilities

Objective 2

Council's waste facilities meet the needs of Council, our community and commercial customers

Objective 3

Maximise the life span of the Cobram landfill through resource recovery and recycling activities

Objective 4

Ongoing review of Council's waste services to improve the efficiency and quality of service delivery

Objective 5

Financial allocations reflect service users and complete costs of waste service provision

Within each objective section:

- the current services are outlined;
- opportunities and challenges are discussed; and
- a list of recommendations are presented.

Objective 1

Operate compliant,
and where possible,
best practice waste
management facilities

Current context

Council's facilities operate under a variety of regulatory instruments.

Cobram landfill

The Moirā Shire municipal landfill is fully licensed and operates under EPA license 15500. This licence includes an Environmental Improvement Plan spanning the next 20 years. Being a licensed site the Cobram landfill's environmental performance is overseen by an EPA appointed Environmental Auditor. The site has independent 53V Audits and annual EPA Audits. Meeting the license conditions requires undertaking a comprehensive monitoring program involving the submission of annual reports to the EPA - Annual Performance Statement (APS) and National Pollution Inventory (NPI).

Monitoring of ground water is undertaken in accordance with an EPA endorsed Environmental Monitoring Plan. The water monitoring results are recorded and trends analysed by an independent hydrologist annually.

Closed landfills

Council has a number of closed landfill facilities. These are at Yarrowonga, Nathalia, Numurkah, Strathmerton, Barmah, Yabba and Tungamah. All undergone some rehabilitation, but some works are yet to be complete.

The Numurkah and Yarrowonga transfer stations are located at former licensed landfill facilities. These facilities are under Post Closure Pollution Abatement Notices (PC PAN). These facilities will have similar reporting structures and accountabilities as the open licenced landfill.

Transfer stations

Council also operates nine transfer stations. Best Practice Environmental Management Criteria apply to transfer stations. This includes removing recyclable material from the waste stream, conserving natural resources and extending landfill life.

Council's transfer stations encourage resource recovery and recycling through the provision of infrastructure and education strategies and pricing structures to maximise the amount of material recovered.

Greenhouse emissions

Landfills create greenhouse gas emissions in the form of methane. Methane is created during the anaerobic decomposition of putrescible waste in the cell.

Although Council is unable to definitively calculate how much methane is generated at the Cobram Landfill, it is estimated to be around 3,000–4,000t per annum (40–50% of Councils total emissions profile).

As per the Council Plan and Environment Sustainability Strategy, Council will continue to focus on removing as much putrescible waste from landfill as possible. This could be achieved, for example, via the extension of the kerbside organic service into our smaller townships, as well as increased education, particularly within the business sector.

Under current legislation Council is not obligated to report specifically on its greenhouse emissions. However, with the recent establishment of Federal and State Government policies and legislation on the control and management of greenhouse gas emissions, it is envisaged that this will be a requirement in future. Therefore it is anticipated the carbon economy will be more controlled and regulated in the future.

Monitoring, with the option to voluntarily report greenhouse emissions and carbon offsets, will demonstrate Council’s ongoing commitment to greenhouse gas emission reductions and set an example for the community.

Key challenges

Meeting the ever increasing regulatory obligations is the greatest challenge in operating compliant, if not best practice, waste management facilities.

Being a small rural landfill our compliance obligations are the same as those imposed on a much larger operation. This includes ground water and landfill gas monitoring and audit requirements. These costs are irrespective of the size of the operation; however, in a practical sense the cost per tonne received is higher for smaller operations. The BPEM is updated regularly resulting in our licence regularly being amended. This generally introduces additional monitoring (both parameters and requirements) and reporting.

It has been identified the Moira Shire rate payers and community have limited capacity to pay. Therefore juggling service levels, meeting regulatory compliance obligations and providing all of Council’s various infrastructure and services needs to be carefully managed.

Recommendations

1	Complete site master plans for Cobram landfill and the former Numurkah and Yarrawonga landfills (under Post Closure PAN)
2	Continue to seek external funding for compliance, development and investment into Council’s waste facilities and services
3	Maintain compliant facilities through the continuous investment in better or best practice management of Council’s landfill and transfer stations
4	Continue to invest in innovative systems and infrastructure for managing Council’s waste facilities
5	Modernise Council’s waste data collection system
6	Continue to pursue opportunities to remove organics from landfill
7	Advocate for responsible compliance requirements rather than a ‘one size fits all’ approach

Objective 2

Council's waste facilities meet the needs of Council, our community and commercial customers

Additional municipal waste

In addition to the municipal waste sources noted above Council also provides street bin and street cleaning services. In the 2016/2017 financial year this equated to 735 tonnes of waste gathered from the streetscapes throughout the Shire.

Commercial customers

The Cobram Landfill receives two classifications of commercial waste "Construction and Demolition" and "Commercial and Industrial". This section considers them together.

Within Moira Shire there are a variety of commercial and industrial sectors. Each produces a number of waste streams, some of which pose unique disposal challenges due to bulk density or volume.

Moirā Shire Council encourages local businesses to participate in waste minimisation programs including those run by Council or the State Government.

The resource recovery of concrete and timbers used in construction has increased the life span of the Cobram landfill. This has been achieved by charging a rate for these waste streams which is cheaper than the landfill price and therefore incentivises resource recovery.

Key challenges and opportunities

Council's kerbside waste and recycling contracts are due for renewal in 2019. This provides the opportunity to review them with an aim to:

- align the contracts with the Kerbside Organic Service; and
- offer different size bin combinations e.g. 80Lts MGBs and 360Lts recycle bins.

Moirā Shire is supporting and encouraging the commercial and industrial sectors to reduce waste and increase recycling. There are a number of benefits and opportunities in doing this, including:

- reducing the reliance on, and therefore extending the life of, the Cobram landfill;
- increased viability of recycling facilities;
- reduced material disposal costs for businesses; and
- improved industry economics.

Reductions in the cost of handling, transport and disposal of waste can increase local business viability. Also, some waste can be recycled or used as raw materials for other industrial processes. This provides the opportunity to attract new specialist businesses to the Shire.

Recommendations

1	Continue to deliver kerbside services through the appointment of contractors
2	Review Council's kerbside waste and recycling contract with a view to aligning it to the Kerbside Organic Service; Consider offering 80Lts MGBs and 360Lts MRBs
3	Continue to work with the commercial and industrial sectors on waste resource recovery and the management of specific waste streams to reduce waste to landfill (e.g. commercial organics and soft film plastics, building and demolition materials)
4	Continuously improve the amenity of Council's waste facilities for the benefit of customers, the community and staff
5	Continue to incentivise recycling through kerbside collection and transfer station fees and charges

Objective 3

Maximise the life span of the cobram landfill through resource recovery and recycling activities

Current context

Kerbside collection of recyclables

Recyclables are collected from 13,802 tenements throughout the Shire. This equates to 84% of households in the Shire.

Council's contractor collects 240 litre Mobile Recycle Bins (MRB) fortnightly. Materials accepted in the comingle collection include:

- Aluminium drink cans and foil;
- Steel cans;
- Glass bottles and jars;
- Polyethylene terephthalate (PET) plastic bottles;
- High density polyethylene (HDPE) plastic;
- All plastics marked from 1 to 6 as recyclable;
- Newspapers and magazines; and
- Milk and juice cartons.

Moira Shire Council had previously set a target for 10% contamination. The average contamination rate for the kerbside recycling is presently 4%, this is significantly better than the rural average of 6.4%. This represents a vast improvement from when the contract began and the contamination rate was 25%. The contamination rate has the capacity to fluctuate, however future education programs are designed to maintain or improve on the current level.

Kerbside organic service

In December 2014 Council introduced a full organics kerbside collection to the townships of Cobram, Nathalia, Numurkah and Yarrowonga. 8,125 tenements, which equates to 75% of the households in Moira Shire, began receiving a compulsory fortnightly collection. Each tenement received one 240 litre mobile Organics Bin (MOB) and an 8 litre kitchen caddy. Each year they also receive a roll of 150 compostable bags.

Items for collection through this organics service include:

- Fruit and vegetable scraps;
- Meat scraps and bones;
- Fish and seafood (including shells);
- Dairy products;
- Teabags and coffee grounds;
- Tissues and paper towels;
- Hair;
- Lawn clippings;
- Garden prunings (including weeds and rose trimmings);
- Twigs and branches under 100mm in diameter; and
- Animal droppings.

Resource Recovery

Designated areas have been set up at each of the nine transfer stations and at the Municipal Landfill for resource recovery. At Yarrowonga, Cobram, Nathalia and Numurkah sheds have been constructed for this specific purpose. The site operator determines what materials are suitable for resource recovery.

The program has a nominal charge or is free of charge with residents able to drop off or pick up unwanted items that are in reasonable condition, e.g. old furniture, timber, pots, doors, chairs, tables, fitness equipment and garden tools.

All goods taken are second hand and recycled, there are no warranties or guarantees and Council does not accept any liability for materials taken.

Key opportunities

Kerbside organics

The opportunity exists to expand the reach of the KOS. Expansion could occur to more townships and households throughout the Shire as well as to schools, businesses and other organisations that operate throughout Moira's townships.

Possible additional facilities

A variety of waste facilities can be established in conjunction with landfills and transfer stations. These facilities can be instrumental in improving resource recovery rates, expanded recycling opportunities and maximising the life of landfills.

Material Recovery Facilities (MRFs) are designed to sort recyclable components of the waste stream (e.g. glass, paper) from incoming loads of commingled recyclables. The separated materials are then generally compacted prior to transport to processing facilities.

MRFs range in complexity from manual sorting on a conveyor belt to fully automated systems. Kerbside recyclables from the Moira Shire area are currently taken to a MRF facility in Wangaratta.

Council currently has very limited capacity to facilitate recovery of commercial and industrial, or construction and demolition waste streams. As this waste represents 45% of the waste disposed into the Cobram landfill each year this represents a significant opportunity to pursue in the future. The separation of waste provides opportunities for specialised waste processing and the development of end markets. The development of new end markets is critical to the waste sector. Council can work with the commercial sector to support these developments.

Recommendations

1	Continue to work with and educate householders who receive the kerbside organic / recycling services to improve the resource recovery of organic / recyclable material from general waste
2	Where feasible expand the organic collection services throughout the Shire
3	Expand the recycling facilities available at Council's transfer stations
4	Work with the commercial sector to improve resource recovery rates
5	Investigate and promote viable resource recovery options within the shire including waste to energy opportunities and new end markets

Objective 4

Ongoing review of council's waste services to improve the efficiency and quality of service delivery

Current context

Council provides a number of waste services to the community beyond the facilities and kerbside services previously mentioned. Many of these services are provided in partnership with other agencies. Council strives to continuously improve the delivery of waste services. Council embraces new and emerging technologies that improve our operational systems and efficiencies and provide enhanced services to our customers and community. The research into, and uptake of new technologies is often done in partnership or with the support of the State Government, GVVRRG and neighbouring Councils.

Transfer stations

Nine lockable and secure transfer stations are currently operating within the Moira Shire. Table 9 details each transfer station site. Each transfer station is located on a closed landfill. Transfer station infrastructure includes areas for the collection and management of separated recyclables.

These items are processed as required through the use of a variety of specialist contractors.

Materials separated for further recycling at the transfer stations include:

- cardboard;
- batteries;
- electronic waste;
- gas bottles;
- green waste
- unprocessed timber;
- metal and scrap steel;
- silage wrap;
- tyres and oil;
- polystyrene;
- triple-rinsed agricultural chemical containers;
- white goods; and
- items deemed reusable for resource recovery.

Disposal of waste and transfer station items are paid for through gate fees. Gate fees are set each year as part of Council's budget processes. The annual gate fees are listed in the 'Fees and Charges' section of the annual budget.

Table 6: Transfer Stations – key site statistics

Site	Days (Hrs) per week	Hours of operation	Transactions (2015/16 FY)*	# 31m ³ skips	Pickups p.a
Yarrowonga	7 (49)	9am - 4pm	15,701	4	144
Cobram	7 (45)	Mon–Fri: 9am - 4pm Sat-Sun: 10am - 3pm	12,549	4	87
Tungamah	1 (3)	1pm - 4pm	290	2	3
St James	1 (3)	9am - 12pm	462	1	1
Yabba	1 (3)	9am - 12pm	542	1	6
Numurkah	4 (28)	9am - 4pm	5,128	3	55
Strathmerton	2 (6)	9am - 12pm	961	1	10
Nathalia	3 (11.5)	Tue, Thu: 8.30am - 12.30pm Sat: 12.30pm - 4pm	1,826	1	25
Barmah	2 (6)	1pm - 4pm	633	1	6
Total	(154.5)		38,092	18	337

* Transaction – Per visit to site / receipt issued upon entry

E-waste

Electronic waste (e-waste) includes televisions, computers, mobile phones, kitchen appliances and white goods. These items include both hazardous and valuable materials. Due to the community-wide increase in use of electronic goods, e-waste is a waste stream which is growing up to three times faster than general municipal waste.

Public Place Recycling

Public Place Recycling infrastructure was first introduced into the streetscapes of the shire's four major towns in 2008. These bins have been successful in reducing Council's waste to landfill.

Event trailer

In 2014, Council was successful in gaining funding from the Victorian Government to build a tandem trailer capable of carrying up to 15 waste and recycling bins.

The Public Place Recycling Trailer provides mobile infrastructure to enable recycling at community run events. The trailer provides Council with the opportunity to lead by example and encourage awareness and behavioural change through best practice waste management practices at Council events.

Since making this trailer available for hire its use by community groups at their various events and activities continues to increase.

'Waste Management in Moira' app

Council is using social media as a waste education tool. The 'Waste Management in Moira' smartphone app was released in December 2016.

The app has enhanced Council's waste education capacity and significantly reduced the number of waste related calls received at customer service.

It is free to both Android and iOS operating systems and provides useful waste service information such as:

- a calendar detailing kerbside bin collection days for specific addresses;
- suitable and non-suitable items for each of the three kerbside bins;
- a report function for kerbside inquiries, illegal dumping etc;
- location, distance and travel time to Moira's transfer stations;
- push notifications to residents regarding important information (schedule changes to accommodate public holidays etc); and
- general waste related facts.

Partnership programs

Council delivers a number of programs in partnership with other agencies. This strategy recommends continuing this partnership approach to waste management in particular for the aspects that involve specific industries and neighbours.

State Government and Sustainability Victoria

The Victorian Government provides the structure for the waste industry through its "Victorian Waste and Resource Recovery Planning Framework". The objectives of this framework are articulated in section 50A of the *Environment Protection Act 1970* and to:

- ensure long-term strategic planning for waste and resource recovery infrastructure at both the state and regional levels;

- facilitate the integration of state-wide directions for the management of waste and resource recovery infrastructure and regional infrastructure needs;
- enable this infrastructure planning to be - effectively integrated with land use and development planning and policy, and effectively integrated with transport planning and policy;
- ensure Sustainability Victoria (SV) and the Waste and Resource Recovery Groups (WRRGs) work together to integrate the SWRRIP and RWRRIPs; and
- enable waste and resource recovery infrastructure planning decisions to be made at the appropriate level of the framework.

Within this framework Council works closely with the State Government which provides policy direction, knowledge through research and development and funding for projects, in particular projects where innovations are being trialled.

Goulburn Valley Waste and Resource Recovery Group

The Goulburn Valley Waste and Resource Recovery Group (GVWRRG) is a Statutory Authority established under section 49C of the *Environment Protection Act 1970* (EP Act). In accordance with Section 49G of the EP Act the objectives of GVWRRG are:

- to undertake waste and resource recovery infrastructure planning to meet the future needs of its waste and resource recovery region while minimising the environmental and public health impacts of waste and resource recovery infrastructure;
- to facilitate efficient procurement of waste and resource recovery infrastructure and services for its waste and resource recovery region through the collective procurement of waste management facilities and waste and resource recovery services in the region;
- to integrate regional and local knowledge into statewide waste and resource recovery market development strategies;
- to educate businesses and communities within its waste and resource recovery region to reduce waste going to landfill by using waste and resource recovery infrastructure and services efficiently; and
- to ensure regional waste and resource recovery implementation plans and programs are informed by local government, business and community and inform statewide waste and resource recovery planning and programs.

In seeking to achieve its objectives, the GVWRRG collaborates with councils, Sustainability Victoria, the Environment Protection Authority, industry, business and the community.

Agricultural waste

Programs for the recovery of used agricultural chemical drums are well established in the Shire. Triple-rinsed agricultural chemical drums are collected at all waste facilities as part of the 'drumMUSTER' program.

Facilities for the agriculture sector to dispose of farm oil are installed at the Cobram, Nathalia, Numurkah and Yarrawonga Transfer stations.

Illegal dumping

Council is required, from time to time, to investigate reported incidents of illegal dumping. Generally, this results in a local response to address the pollution issue. Severe or repeat offenses can result in a notification to the EPA for an enforcement response.

State Parks

The entire northern, eastern and south western borders of Moira Shire are publically accessible River Red Gum parks. Within these parks there are a number of beaches and reserves which are ideal for day visits and camping. Visitation varies throughout the year with peak visitor periods experienced around Christmas, Easter and other public and school holidays. It has well understood these campers are vital to the region's tourism industry.

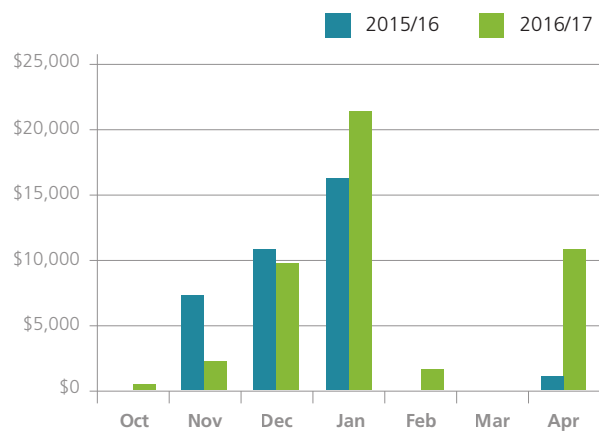
The Parks Victoria "carry in / carry out" policy is the sole method of waste management within Victoria's public parks. This policy has resulted in Council providing additional waste facilities to accommodate 'camper's waste' and to minimise littering. The provision of these services is costly.

The Murray River Litter Taskforce was established by the Murray River Group of Councils, Parks Victoria, the GVVRRG and SV to provide a forum for a collaborative approach to addressing this issue. The taskforce is working on projects that aim to change people's behaviour in relation to waste management and environmental protection.

As well as being active contributors to the taskforce, Moira has engaged contractors to provide waste collection for campers and day visitors accessing our parks. This waste is transported to the Cobram landfill. Bins are situated periodically at the following locations:

- Hogans Road, Woodlands;
- Majors Creek Road, Bundalong;
- Pyke Road, Bundalong;
- Pasley St, Bundalong;
- Toilet Block, Strathmerton;
- Thompson's Beach, Cobram;
- Maloney St, Barmah;
- Ulupna Island; and
- Moira Lakes Rd, Barmah.

Figure 7: Camper Bins - Monthly totals



Education

Education plays a critical role in gaining community co-operation and participation in waste minimisation and management including promoting behavioural change. Throughout the year and on an ongoing basis Council delivers general, and as required, targeted educational programs and activities.

The implementation of an education program requires a co-ordinated approach featuring:

- media advertising (e.g. television, radio, print) including social media;
- school programs;
- householders through letters and mailouts;
- tours of waste facilities;
- recycling displays in public areas (e.g. libraries, shopping centres, markets);
- working with local industry forums (e.g. community and environmental groups); and
- coordination with external education programs.

Free mulch days

Mulch is available free to the public at any time throughout the year. However, twice a year Council hosts 'Free Mulch Days' at transfer stations throughout the Shire. On these dates people are able to have their trailer, ute or truck loaded with mulch for free. Table 7 shows the volumes of mulch that has been given out on Free Mulch Days each year since 2014.

Key opportunities and challenges

E-waste

In 2015 the Victorian Government released its “Managing e-waste in Victoria: Starting the conversation” report. This report clearly states the Andrews Government has committed to banning e-waste from landfill in Victoria to, amongst other things, reduce waste going into landfill.

Therefore preparing for and finding a manageable solution for e-waste disposal is a key priority that Moira Shire is working on with the GVWRG and its member councils. This issue is particularly challenging for Councils such as Moira where currently, e-waste is disposed of at our landfill site and transfer stations. From there the e-waste is bulk hauled to a processor (currently in Melbourne) for recycling.

Public Place Recycling

Council seeks every opportunity to increase the rate of recycling in our own operations and the street scape is no exception. A recent trial held in Cobram involved the replacement of nine recycle bin apertures and customising the signage. The result was an increased recycling volume with decreased contamination.

Based on the success of this trial the program has been continued throughout the Shire. Future efforts will focus on understanding an area’s specific demographics, waste source/s, volumes and types. Customised apertures and signage will be installed.

‘Waste Management in Moira’ App

Promotion of the app, using incentives will continue in an effort to increase the number of download. This decreases our reliance on paper based means of distributing waste information.

Agricultural Waste

Soft film plastic, e.g. silage wrap, is a challenge for the entire waste industry. Historically Council has worked closely with a private operator, based in the Shire, to recycle soft film plastics. In recent times the private contractor has relocated out of the shire causing Council to stockpile this material. Council is committed to find a financially viable method to manage and reuse this material stream.

Education

The implementation of an education program requires a co-ordinated approach featuring:

- media advertising (e.g. television, radio, print) including social media;
- school programs;
- householders through letters and mailouts;
- tours of waste facilities;
- recycling displays in public areas (e.g. libraries, shopping centres, markets);
- working with local industry forums (e.g. community and environmental groups); and
- coordination with external education programs.

Table 7: Volume of processed green waste (m³) provided to the public on Free Mulch Days

	Cobram	Yarrawonga	Numurkah	Nathalia	Total
2017	189	337	274	0	800
2016	111	329	406	N/A	846
2015	61	174	223	N/A	458
2014	148	285	724	36	1,193

Recommendations

1	Where possible enhance service delivery through the uptake of new and emerging technologies; and in doing so demonstrate leadership in the provision of waste services
2	Review the operation of Council's transfer stations to optimise efficiency and ensure they are meeting the customers' needs
3	Continually review individual waste stream end use to achieve best practice and financially viable outcomes (e.g rigid plastic, soft film (silage wrap), steel, green waste, E-waste)
4	Continue to improve the delivery of public place waste services
5	Improve waste management practices at events held within the Shire through infrastructure provision, planning and education
6	Continue to work in partnership with State Government, the Goulburn Valley Waste and Resource Recovery Group and industry in the planning, funding for and delivery of waste services
7	Continue to provide recycling services, support and waste solutions to industry including the agricultural, manufacturing and retail sectors
8	Continue to monitor and as necessary enforce illegal dumping
9	Continue to work with neighbouring Councils, Parks Vic and the GVWRRG on viable solutions for campers waste
10	Develop a waste communication and education strategy aimed at improving waste management in the community, households and industry
11	Continue to monitor customer satisfaction rates

Objective 5

Financial allocations
reflect service users and
complete costs of waste
service provision

Current context

In recent times Council's waste charges have been determined by the Waste Management Business Plan of the time and periodically adjusted as part of Council's annual budget.

As mentioned in the introduction, this strategy uses the guiding principles of fees and charges incorporate full lifecycle costs and user pays.

Current income streams

Council has the following revenue sources specific to waste management:

1. Itemised charges for domestic, recycling and organic kerbside services;
2. Environmental levy;
3. Landfill gate fees; and
4. Transfer station gate fees.

Rateable kerbside collection services

Payment for kerbside collection services occurs through itemised charges on the annual rates notice.

Some residents who do not live on a waste collection route are eligible for a kerbside collection service. These residents have the option to transport their bins to a designated drop-off point, nominated by the Council, for collection. This process is managed by the 'Kerbside Garbage, Recycling and Organic Collection' Policy.

Environmental Levy

In 2004/05 Council introduced an Environmental Levy. This was to ensure every rateable property made a contribution towards the cost of all waste services including the costs associated with waste disposal site rehabilitation and development. Prior to the introduction of the Environmental Levy only ratepayers receiving a kerbside collection service were funding all these expenses (Council Plan 2006/07 to 2009/10 incorporating strategic Resource Plan 2006/07 to 2015/16 revised and adopted 18 June 2007).

This Environmental Levy is collected via the annual rates notice. Currently, as at November 2017, there are 17,400 rateable assessments. The Environmental Levy is applied to each rateable property which has the capability of generating waste which can be deposited at a landfill or transfer station.

The Environmental Levy is payable unless one of the following exceptions apply:

- Rateable land that is 'farm land' within the meaning of s 3(1) of the Valuation of Land Act 1960 and is a 'single farm enterprise' within the meaning of section 159(4) of the *Local Government Act 1989*;
- Charitable lands; or
- Non-Rateable land under the Local Government Act which includes public and religious properties.

Landfill gate fees

Landfill gate fees are charged at the Cobram landfill and Council's transfer stations. They apply to general waste that is ultimately disposed of at the Cobram landfill. These fees are reviewed annually and included in Council's budget. The prices are differentiated according to the following sources:

- Moira household waste (charged per cubic meter);
- Non-Moira household waste (charged per cubic meter);
- Moira Shire commercial operator (charged per tonne);
- Non-Moira Shire commercial operator (charged per tonne).

Transfer station gate fees

Transfer station gate fees are specific to the various waste streams Council accepts and manages through the provision of transfer stations services. These fees are reviewed as part of the annual waste budget.

Waste expenditure

Operating compliant waste facilities and providing quality waste services involves significant operational and capital expenditure. The income streams noted above are required to cover the immediate and longer term requirements of waste service provision.

Costs associated with waste service provision include:

- Regulatory compliance (detailed in objective 1);
- Operating the Cobram landfill (according to objective 1 and 2);
- Providing resource recovery and recycling activities (according to objective 3 and 4); and
- Providing the range of services (objectives 2, 3 and 4).

Further to these direct operational expenses there are additional costs associated with waste management. These include:

- Road maintenance and repair as a result of heavy waste trucks operating on local roads;
- VAGO landfill remediation requirements; and
- Financial assurances for remedial action, site rehabilitation and aftercare.

Financial assurances

The true cost of landfill includes costs associated with the siting, development, operation, rehabilitation and aftercare management of landfill, along with loss of amenity of the land and the costs associated with greenhouse gas costs. The EPA holds a Bank Guarantee as a financial assurance for the Cobram landfill. Council is currently in negotiation with the EPA in relation to this requirement.

Landfill rehabilitation reserve

Council has a landfill rehabilitation reserve to ensure we can meet our future commitments in relation to active and closed landfill facilities. Funding for this reserve comes from one of the four waste income streams previously listed.

Key opportunities

Rebalancing the mix and user pays principles

The 2009 Waste Management Business Plan (adopted 18 May 2009) stated that *“Council’s approach has been to focus on establishing a viable standalone waste service that is funded from service charges and user fees and is able to meet its servicing, capital and rehabilitation requirements”*.

As previously identified within this Business Plan, there are a number of immediate and longer term financial obligations in relation to waste management. Furthermore, the individual services that individual residents, ratepayers and business use vary widely.

To understand the impact of fluctuating prices, population, waste volumes etc on customers Council has developed a modelling tool. This modelling tool enables numerous variables to be entered and extrapolated over the medium term.

Continuing to operate a viable stand-alone waste service remains critical to Council. This strategy recommends reviewing Council’s waste charges. This review will focus on financial allocations (fees and charges) reflecting individual service users and the complete costs of waste service provision.

This review will be informed by this WMSS and undertaken as part of the Rates and Service Charge policy review occurring in early 2018.

This review is timely because:

- the successful introduction of an organic kerbside service reduced the volume of putrescible waste in the kerbside waste collection by 1.5kg per household per week or 15%. A key focus area for the short to medium term is to remove the remaining organics, including packaged food, from the residual waste stream;
- the pending renewal of Council’s waste and recycling contract; and
- the recent completion of the state and subsequently regional waste and resource recovery implementation plans providing some clarity around future challenges and expectation in relation to waste management, for example increased requirements for rehabilitation and regulatory compliance and the e-waste ban.

The application of a user pays principle to waste collection will be developed around providing incentives to reduce waste generation by providing:

- volume based incentive for smaller rather than larger kerbside waste bins; and
- recycling being cheaper than garbage disposal.

Recommendations

1	Review, according to a user pays philosophy, waste rates and charges as part of Councils overall Rates and Service Charge policy review
2	Account for Council’s internal waste charges – operations (including road maintenance and repair due to damage caused by the use of the local road network by kerbside collection vehicles), Council’s environmental services, depots, emergency management
3	Waste site operations and capital works are funded through waste incomes
4	Introduce incentives for ongoing reduction in waste to landfill. For example, having available different size kerbside waste bins with differential charges

Implementation monitoring and reporting

This Waste Management and Services Strategy will be implemented through detailed action planning. This action planning will involve developing key performance indicators for delivering on the recommendations.

Appendix 1



WASTE MANAGEMENT ACHIEVEMENTS REPORT

2017



KERBSIDE ORGANICS SERVICE



**Winner 2015 Premier's
Sustainability Award; Finalist
2015 Banksia Awards**

The kerbside organics service has been a major success since it began in Cobram, Yarrawonga, Nathalia and Numurkah in 2014.

As at August 2017 almost 2,500 tonnes of organic waste is being turned into compost for reuse on gardens throughout the region.

The average contamination rate is around 0.4% which is significantly lower than the state average.

It is estimated this initiative will reduce council greenhouse gas emissions by up to 825 tonnes per year.



Winning the 2015 Premier's Sustainability Award



PUTTING THE POLY IN YOUR POCKET



Nominated for Australia Waste and Recycling Expo (AWRE) Award 2013, Innovation Category.

Expanded polystyrene represents a problematic litter item. It does not decompose and often becomes air-borne or ends up in our water ways.

Polystyrene is 98% air and is very bulky by nature - removing it from the general waste stream extends the effective life of our landfill.

Residents can now deposit, free of charge, their polystyrene waste at any of Moira Shire's nine waste transfer stations, thanks to the polystyrene recycling project called 'Putting the Poly in Your Pocket'.

To help reduce costs and make it easier to transport, we have invested in a mobile compaction unit with a compression ratio of 40:1. This unit combines a Mil-Tek polystyrene compaction machine, air compressor and diesel generator, which are all mounted in a custom built trailer.

The compacted bricks produced are re-processed into new products such as plastic photo frames and coat hangers.



COUNCIL USE OF RECYCLED PRODUCTS

Council has used the following products:

- Road seal containing recycled rubber and plastics;
- Park benches made from recycled plastic bags;
- Recycled paper;
- Mulch on garden beds; and
- Recycled concrete.

We also work with contractors to encourage recycling from demolition projects.



COBRAM LANDFILL REHABILITATION

The Cobram landfill rehabilitation “Part old cells east and cells 1 through 3” was a two year project that rehabilitated all of the closed cells within the Cobram landfill in the one project. It had a budget of approximately \$2million dollars (\$250,000 was recovered through a sustainability Victoria grant) and it covered an area of 3.7 Ha.

The challenge was to bring old fill area up to current BPEM standards on a site challenged with flood and cultural heritage overlays. The design was cutting edge with a full geosynthetic liner and the use of 17 biofilters over vertical gas wells to deal with landfill gas emissions. Mulch left over from the tornado was recycled into the vegetation layer of the cap profile

The borrow pit also became a catch and release water storage for all surface waters discharged from the site, this dam also was cleverly shaped to supply a water landing strip for the Cobram model Aero club.

The project ran for 2 years with design December 2013 works started July 2014 and ran through July 2015 and received Final EPA sign off in December 2015. It was delivered within budget and project Management was by Moira Shire Waste Management staff; the project was also audited by an external environmental auditor and met all the legislative requirements.





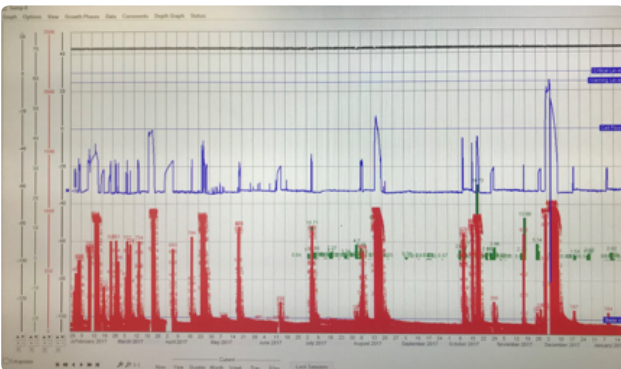
LEACHATE MANAGEMENT SYSTEM

The telemetry sender stores the live readings and sends it through every hour back to the central computer.

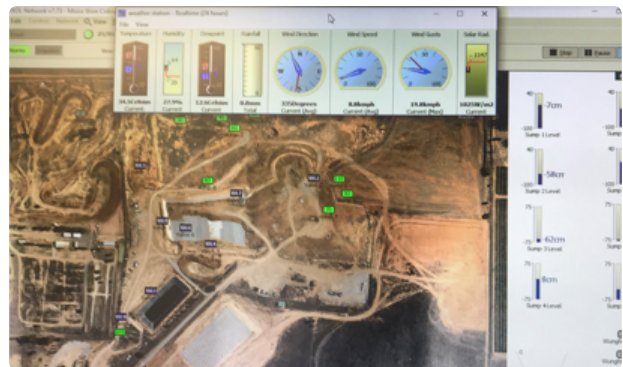
Each sump has its own sender which are all solar powered with battery backup and will record information during power outages and send stored data when the power returns so there are no data gaps.

Each individual sump has an automated air driven pump capable of pumping 1000 LPH. The sumps record live leachate levels and flows back to the pond. This is transmitted via telemetry to the main computer and backed up in each telemetry sender.

The system also incorporates a weather station and leachate dispersion system which irrigates leachate back over the active cell.



Example of leachate data including flow rates, sump heights and rainfall events, over 12 months in Cell 8.



Each of eight irrigation guns can be individually controlled from the central computer or remotely as required.

The system has a simple dash board which displays all sump leachate heights and the leachate dam levels.

The leachate management system was developed in house and the weather station overrides the irrigation to stop drift outside the cell boundaries. The data can be displayed in many formats to analyse water balance, cap performance and flag any issues with the system.

The system also reports back any faults via SMS in live time. This feature also alarms via SMS if leachate levels rise therefor avoiding environmental issues and EPA non compliances. There is the ability to log into the system and make adjustments from anywhere with GSM coverage around the world.



FREE MULCH DAYS

Moirā Shire Council offers free mulch to residents as part of our commitment to responsible waste management.

The mulch available has been produced from green waste deposited at our transfer stations by the public and is available two times a year from the Yarrowonga, Cobram and Numurkah Transfer Stations.

Approximately 1,300m³ of mulch was loaded free of charge and used by residents last year.



PUBLIC PLACE RECYCLING TRAILER

A mobile waste, recycling and organic disposal service, which offers up to 15 bins, has been made available to assist community groups with event waste management.

The trailer has been used to support community events such as agricultural shows, cultural festivals and sporting events.

As a separate achievement make something about the street scape recycling infrastructure a photo of the stop sign and some figures re the reduction in waste in the trail near the post office

In addition to the trailer, council has expanded the coverage of public place recycling throughout streetscapes including the Yarrowonga foreshore and recreation reserves such as Scott Reserve in Cobram.



WASTE MANAGEMENT IN MOIRA APP

The Waste Management in Moira App was launched on 1 December 2016 to coincide with and help celebrate the two year anniversary of the Kerbside Organic Service.

The Waste Management in Moira App is free and available for Android and iOS.

The waste App provides waste service information to residents and tourists such as:

- a calendar detailing bin collection days to all addresses within Moira Shire;
- suitable and non-suitable items for each of the three kerbside bins;
- a report function for kerbside inquiries and illegal dumping;
- location, distance and travel time to Moira's various transfer stations; and
- notifications to residents regarding important information for instance, change of collection schedule due to public holidays

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