

Waste Minimisation and Recycling Strategy 2017

Responsible Directorate: Environment and Infrastructure

Authorised by: Council

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1. Executive Summary

The City of Boroondara recognises the importance of providing effective waste management through the provision of its waste services that improve the sustainability of the urban environment. This *Waste Minimisation and Recycling Strategy 2017* provides the strategic direction and an implementation approach for sustainable waste management over the next five years. The Strategy builds on Council's commitment to environmental sustainability, enhanced amenity, quality facilities and assets, responsible management, and strong and engaged communities (*City of Boroondara Council Plan 2017-21*).

While community surveys in Boroondara show high levels of satisfaction with the services provided, the City of Boroondara (like other local governments) faces a number of waste management challenges and opportunities. These include the closure of municipal landfills, expected increases in waste as a result of population growth, new industry recycling programs such as food waste recycling, and the banning of e-waste from landfill.

This new Strategy will build on the achievements of the previous 2011-2016 strategy to guide waste, recycling and litter services and provide the foundation for service improvements to benefit the local Boroondara community. The vision defining the Strategy is to continue to provide more efficient and effective waste services and further reduce waste sent to landfill. There are a number of areas to be addressed over the life of the Strategy including:

- the large proportion of food organic waste sent to landfill for disposal with waste bins in Boroondara containing approximately 31% food waste
- the high level (35%) of divertible material (including recycling and greenwaste) present in the landfill garbage waste stream
- the amount of contaminated material (8%) in recycling bins
- raising community awareness of the services provided and enhancing recycling rates
- increasing efficiency at existing waste and recycling centres.

The *Waste Minimisation and Recycling Strategy 2017* incorporates a number of actions targeted to address these matters. The primary action for the strategy is to divert food waste from the landfill waste stream to the green organics waste processing stream. Other important actions include expanding community education and recycling awareness, extending recycling services to local businesses and upgrading to existing waste facilities.

2. Introduction

2.1. Vision and purpose

The *Waste Minimisation and Recycling Strategy 2017* aligns with Council's Strategic Objective "Our natural and urban environment is improved in a sustainable way. One of the City of Boroondara's strategic objectives is to ensure our natural and urban environment is improved in a sustainable way. To achieve this vision, the aims of this *Waste Minimisation and Recycling Strategy 2017* are to:

- reduce the volume of waste deposited at landfills
- maximise recycling
- achieve sustainable environmental outcomes by providing best practice services to the Boroondara community.

2.2. Corporate framework

The Council Plan theme 2- Sustainable Environment, states that 'our natural and urban environment is improved in a sustainable way'. Council's *Annual Plan 2016-17* outlined a major initiative to continue to provide and further enhance effective and efficient waste services through developing the *Waste Minimisation and Recycling Strategy*.

3. Background

3.1. Context

The City of Boroondara acts within a wider policy framework for waste management based on the waste management hierarchy.

The Commonwealth Government established the *National Waste Policy: Less Waste More Resources*, and works with the States/Territories and industry sector to establish national product stewardship schemes for end-of-life management of some materials.

The Victorian Government (through Sustainability Victoria) has developed a range of strategies for particular waste streams and related issues such as the *Victorian Organics Resource Recovery Strategy*, the *Victorian Market Development Strategy for Recovered Resources* and the *Victorian Waste Education Strategy*.



Boroondara is one of 31 member councils of the Metropolitan Waste and Resource Recovery Group (MWRRG), which provides assistance in coordinating programs, commissioning research, managing contracts and advising on best practice in municipal waste management.

3.2. Current Status

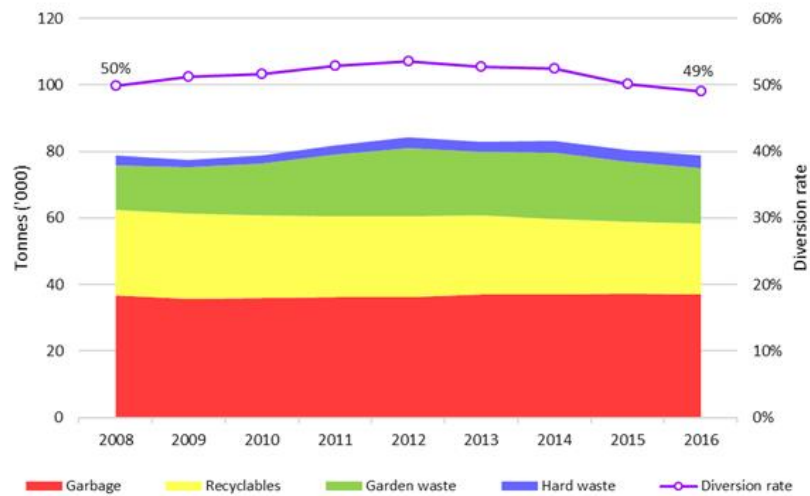
The City of Boroondara provides kerbside collection services to around 64,000 households for garbage, recyclables, garden waste and hard waste. Since the previous 2011 strategy was adopted, Council has introduced some changes to these services to increase efficiencies and continue to reduce the amount of waste sent to landfill. These include:

- the introduction of a booked hard waste collection in 2012
- campaigns to further downsize 240 litre garbage bins
- a more equitable approach to the disposal of green waste by residents.
- the introduction of bundled green waste and Christmas tree collections in 2014/15
- the Boroondara Recycling and Waste becoming a permanent Detox your Home facility in 2014
- the introduction of flexible plastic packaging collections in the kerbside service in 2017.

In recognition of the services provided and the facilities available to the community the Boroondara Recycling and Waste Centre was acknowledged as the best transfer station in Australia by the Waste Management Association of Australia in 2011.

In 2015-16 around 78,900 tonnes of waste was generated. Of this, approximately 51% was deposited to landfill and 49% was diverted for recycling.

Compared to state averages, Boroondara households are high generators of both waste and recyclables. The waste diversion from landfill is reducing for a number of reasons, including the reduced use of newsprint as more people read newspapers online and an industry trend for the light-weighting of glass and plastic materials. While the waste going to landfill has remained steady the amount of recyclables collected has reduced impacting on waste diversion percentage.



General waste bin content audits indicate that there are still considerable amounts of potential recyclables and food organics that can be diverted from landfill. Boroondara garbage bins contain approximately 35% potential divertible material. Recycling bins contain approximately 8% contamination.

The Boroondara community is serviced by two waste and recycling facilities: the Boroondara Recycling and Waste Centre (RWC), which incorporates a transfer station and education centre, and the Kew Recycling Centre.

Boroondara RWC accepts residual waste as well as a large range of materials segregated for recycling (including those not accepted in kerbside recycling) such as:

- batteries (both car and household batteries)
- clean soil
- comingled recyclables accepted in kerbside collections – paper, cardboard, glass bottles & jars, milk & juice cartons, plastic containers types 1-7, aluminium and steel cans
- concrete, bricks and tiles
- electronic equipment or e-waste (including televisions and computers)
- extruded polystyrene
- fluorescent light globes
- garden organic waste
- gas cylinders
- mattresses
- metal (including whitegoods such as refrigerators and washing machines)
- mobile phones
- motor oil
- paint
- tyres



Disposal of landfill waste at the Boroondara Waste Centre

Kew Recycling Centre accepts only recyclable material included in the kerbside collection program, i.e. paper, cardboard, glass bottles and jars, milk and juice cartons (liquid paperboard), plastic containers (types 1-7), aluminium foil, aluminium and steel cans, and (from February 2017) flexible plastics. No garbage or garden waste is accepted.

4. Methodology

The Strategy was developed through:

- consultation with the community (through community surveys) and internal stakeholders
- analysis of waste and recycling historic data and future trends
- consideration of the context to the strategy, including local, state and national policies
- review of achievements and outcomes of the previous *Waste Minimisation and Recycling Strategy 2011-2016*
- assessment of waste management and resource recovery facilities in the City
- analysis of sustainable options for future waste and recycling services.

5. Consultation

Prior to the development of this strategy, Council conducted an online community survey on waste and recycling services. 303 responses and comments were received. All comments received were considered, and inform this strategy.

The feedback received from the community consultation was that the community was very satisfied with Council's waste and recycling services.

86% of residents indicated they were satisfied or very satisfied with Council's hard waste service. Feedback was received from 11 residents (3.6% of respondents) that they preferred the previous annual hard waste service. This suggests strong support of the booked hard waste service.

A majority (64%) indicated they do not use the booked bundled green waste service and Christmas tree service as the fortnightly bin based green waste service was sufficient. Other comments provided included not being aware of the service, bundling conditions being difficult to meet and not needing the service.

Around 71% of respondents indicated that they used the Boroondara Recycling and Waste Centre however some respondents were not aware it was available, that items are too difficult to transport and being uninformed about how it works or what can be accepted.

In relation to food waste diversion 63% of respondents indicated they recycle food waste at home however 23% suggested Council could provide a compost bin or worm farm which indicates not many residents are aware of "The Compost Revolution" program.

With community education programs a large proportion (91%) indicated that they or someone in their household had not participated in these programs, however they also indicated the need for more community education programs.

Consultation also took place with officers from Council's Waste Operation Team and Environment and Sustainable Living.

Council considered the draft Strategy on 26 June 2017 and approved the draft for further public consultation. The consultation included engagement via the City's website and social media, advertising in local newspapers, and both general and targeted invitations to comment. The feedback and comments were analysed and minor amendments were made to the draft. However,

no wholesale changes were necessary and feedback demonstrated strong support for the directions in the draft Strategy. Community education was highlighted and widely supported as a key priority.

6. Strategic goals and objectives

Boroondara City Council will work with the community to provide efficient and effective waste services and improve the natural and urban environment in a sustainable way. The *Waste Minimisation and Recycling Strategy 2017* identifies the following strategies and action themes.

6.1. Diverting Food and Garden Organic Waste

Food and garden organic wastes make up a large proportion of the waste stream. Diverting these organics will have a number of benefits such as reducing greenhouse gas emissions that arise from landfilling, extending the life of landfills, production of beneficial soil conditioners and reducing costs. There is an opportunity to recover organics by introducing food collection either via a separate bin service or within the garden waste bin. Either of these options would require changes to current collection and infrastructure systems. An opportunity will arise in 2018 with the expiration of the current green waste disposal and recycling contract, to pursue to the diversion of food organics from the landfill waste stream, into the green waste stream.

A key outcome and priority of the Statewide Waste Resource Recovery Infrastructure Plan 2017-2046 is to build the metropolitan organics recovery network and maximise the network's productivity by accepting household and commercial food waste. A small network currently exists, with further facilities planned to be built by 2019 in the south-east of Melbourne. The technologies used in these facilities to process the collected organic wastes vary from traditional windrow composting to fully enclosed, in-vessel aerobic composting and maturation. The products produced at these facilities have many uses including as a fertiliser substitute in broad acre farming, soil enhancers and mulches.

Council will divert food organics from the landfill waste stream. This will involve the following actions:

- investigating the practicalities to deliver this service to the community
- reviewing bin collection frequencies
- investigating bin collection options of collecting both food and garden waste (in the same bin)
- provision of an organics bin to properties that do not currently have a garden waste bin
- joining the MWRRG regional organics processing tender
- addressing bin sizes and pricing structures
- infrastructure improvements at the Recycling and Waste Centre to manage food organics.

6.2. Waste Avoidance and Minimisation

A key action in minimising waste is influencing community behaviour regarding waste production. Council has a strong commitment to environmental sustainability and waste minimisation and demonstrates leadership in a number of ways including:

- adopting a green procurement approach, buying environmentally preferred products in line with Council's procurement policy
- having an internal green team that promotes and actively seeks opportunities to reduce waste and increase recycling in day-to-day operations (e.g. re-using old recycling crates and used tyres as planter boxes for plants and fruit trees)
- monitoring Council performance via Sustainability Victoria Local Government Annual Survey and Local Government Performance Reporting Framework and reporting to the community
- providing regular articles in the *Boroondara Bulletin* and *Progress Leader*
- participating in school programs, at local festivals and sustainability forums
- collection of new materials such as polystyrene, flexible plastics and e-waste.

Council will continue to advocate for waste avoidance through changes in consumption and purchasing behaviours in the local community.

This will involve undertaking initiatives with local community groups to help build community sustainability and well-being, such as:

- encouraging reuse and repair activities, e.g. by 'how to' workshops on repair of large items, or 'men's shed' activities for charity
- working with local business groups on waste minimisation initiatives, eg. local retail programs for alternatives to disposable plastic bags, food waste recovery systems from cafes and restaurants.

Council sees continuous improvement of achievements as an important feature in demonstrating leadership and seeks to raise awareness of waste minimisation opportunities for the broader community.

6.3. Community Education and Awareness

Community education is essential to achieve reduced waste generation, maximise waste diversion and reduce bin contamination levels for greater resource recovery. Council offers some tools and programs to educate the community on waste minimisation and recycling. These include:

- educational postcards and A-Z guide to waste services to provide information about collection days, what materials can be placed in each bin and correct placement of bins on the kerbside
- workshops via the *Living for the Future* program to educate the community on sustainability issues (including waste minimisation)
- subsidised compost bins/worm farms through *The Compost Revolution* program
- group tours and workshops at Boroondara RWC's Education Centre to show what happens with waste.



Boroondara school and community education Centre

The community survey results showed that many residents remain unaware of these initiatives. There are relatively high contamination rates in Boroondara recycling bins. Awareness levels need to be raised in relation to (among other things) composting, what materials should be recycled and how they should be presented (i.e. loose and plastic-bag free apart from the flexible plastic program). Additional work is needed to demonstrate how materials are recycled and what the end-result of residents' efforts contribute to (particularly in relation to what items are made with recycled material).

Demand for on-site tours and presentations about waste and recycling by schools and the general community is increasing. There is an opportunity to expand education resources would allow further growth of community waste education programs and contribute to existing operations. The importance and level of investment in this will be linked to other actions in this Strategy, and what actions are undertaken over the life of the Strategy at state and national levels of government.

Council will expand and grow its community education program. This will involve investigation of options for additional resources in the context of the various actions under this strategy, and projects and initiatives in the broader waste sector.

6.4. Improving Collection Services

Council provides collection services to approximately 85% of rateable properties. This includes some small businesses that are eligible for Council's collection services, although there may be scope to improve current recycling rates by expanding the collections to additional businesses.

There is a future opportunity to standardise the bin colours used in Boroondara to align with those established in Australian Standards. This would ensure that Boroondara benefits from community education messages initiated more widely (for example in neighbouring councils, Sustainability Victoria and by the MWRRG) and reduce any confusion by residents on bin use. To align with the Australian Standards would involve the following:

- garbage bins: changing the lid to red
- recycling bins: changing the body to dark green or black
- garden waste bins: changing the lid to lime green.

There would be logistics issues to resolve, such as collection challenges when changing from an orange lid for green waste, to a red lid for garbage, and the difficulties of correctly identifying bins when a portion of the kerbside collection occurs before dawn.

There are also significant costs in providing replacement bins for all properties.

If food organics are successfully migrated to the green waste stream, an opportunity would exist to link bin lid changes with this service charge. Alternatively, a change could be introduced and phased in over time as part of the ongoing bin maintenance program.

Waste audits show there is further room for improvement in waste diverted from landfill. There is still around 35% of materials (paper, cardboard, glass, plastics, metals and garden waste) in bins that could be recycled. Higher recovery rates are potentially achievable with enhanced community education programs and if food waste is included in the green waste collection service.

Fortnightly co-mingled recycling collection from 240 L bins is the predominant collection frequency across the state. Boroondara is one of four metropolitan councils that currently exceed this, with collections performed on a weekly basis. Compared to neighbouring councils (such as Manningham and Whitehorse City Councils) that have a fortnightly service, the cost of recyclables collection per bin is the highest in Boroondara, however Sustainability Victoria data shows Boroondara achieved higher yields of recyclables. It is proposed that ongoing trends and demands continue to be monitored regarding recycling volumes and collection logistics across the other waste streams, and what impact or opportunity this might present for recycling collection in the medium to long term. There is no proposal however, to actively pursue changing recycling collection frequencies or bins sizes at this time.

Contamination levels in kerbside co-mingled recycling bins are considered to be marginally high at 8%. Contamination levels could be improved through further education on the type of materials accepted; a lack of information in this area was evident in responses to the community survey.

The change from annual hard waste collections to a booked hard waste service has resulted in higher tonnages of total waste collected. However over 24% of hard waste collected is being recycled or donated to charities and diverted from landfill. The results of the survey show respondents who do not currently use the service have a marked preference for the previous annual service collection, with comments citing:



Kerbside collection services

- the potential for greater recovery and reuse of materials by neighbouring residents
- the opportunities for social wellbeing and community cohesion that such communal activities present
- a community perception of a lack of visual recycling evidence during collection.

Council will address any negative perceptions around the lack of recycling to avoid the risk of undermining wider community education messages.

A majority of garden waste collected by Council comes from the kerbside garden waste bins. Council also offers a booked bundled garden waste collection, but its yields are comparatively low. Many respondents from the community survey indicated they do not use the booked bundled service as the fortnightly service is adequate and the bundling criteria was considered difficult to meet. Council will consider reviewing the cost effectiveness of continuing to provide this service and ways to better promote it.

Street sweeping is conducted on a four-weekly cycle, with additional sweepings carried out in autumn in heavy leaf-fall areas. Footpath sweeping and cleaning is undertaken in high profile areas daily or weekly. Some comments from the community survey indicate that more frequent sweepings are required in autumn and should begin earlier. Council will review the dates and zones for street sweepings in autumn for optimum management of garden waste in public areas.

Council will continue to review its service offerings and service levels for all services over the life of this strategy. Priority areas for review and change are green waste, landfill waste, and food organics. All other services will be reviewed with the objective of ensuring best value for the Boroondara community.

6.5. Recovery of Other Materials

There are a range of other material recovery and collection systems relevant to Boroondara:

- **Flexible plastics and film:** Council commenced the collection of flexible plastics in February 2017 as part of the flexible plastics recycling program funded by the MWRRG. These materials make up only a relatively small proportion of waste in garbage bins, but are the packaging material that is growing fastest in use.
- **Polystyrene:** Boroondara RWC is one of four waste facilities within the Melbourne area that accepts polystyrene. Recycling of this material is a challenge given that local end markets are still immature and there are few local polystyrene reprocessors.



Baled recyclables

- **Paint:** Paintback, the voluntary product stewardship scheme covering waste paint, commenced in April 2016. Paint is currently accepted for recovery at the Boroondara RWC but the amount managed at the facility is likely to increase with growing uptake of the program in future.
- **Electrical and electronic products (e-waste):** Council has arrangements with TechCollect to collect and recycle televisions and computers as part of the National Television and Computer Recycling Scheme. However, there are other e-waste products brought to transfer stations not covered under this free scheme for which residents are charged a fee. The Victorian

Government is currently developing legislation to ban e-waste from disposal to landfill; it is understood this will encompass any product with an electrical plug. If this is enacted, Boroondara could see a rapid growth in the amount of both small and large electrical items that it needs to manage at the Boroondara RWC.

- **Plastic oil containers:** Waste oil and their containers are currently accepted for recycling at Boroondara RWC. Plastic oil containers have been managed under an industry scheme since 2004, however this scheme is expected to cease soon due to lack of participation by oil companies. It is not clear what avenues for future recycling of these containers will be available nationally, although Council is entering into an arrangement to continue to provide this service.
- **Air-conditioners and refrigerators:** Recovery of these is generally handled under existing metal recycling systems; although it is unclear whether a product stewardship scheme will be in place in the near future or what impact any future regulation may have on the recycling system.
- **Household batteries:** Household batteries can be recycled at the Boroondara RWC. A product stewardship scheme for non-rechargeable handheld batteries (<5 kg) has been proposed by battery manufacturers, although there are current industry differences as to whether this should be a voluntary or mandatory scheme. With increased public attention, the amount received at the RWC is likely to increase, and the management infrastructure needed to manage this will need to keep pace. The centralised collection point for batteries and other non-bin based recyclables accepted for recycling at the Boroondara RWC is not convenient or accessible to all residents and is considered a disincentive to the recovery of these items. Providing alternative collection points within the City would result in fewer of these items disposed in waste bins.
- **Photovoltaic systems:** With increasing community adoption of solar energy technology, the amount of equipment reaching its end-of-life is expected to increase greatly in coming years. The Commonwealth Government predicts it will become Australia's largest electronic waste growth stream in future years, and it is listed on its 2016-17 product list for potential product stewardship arrangements.

Council will continue to explore opportunities to increase the range of materials that can be included within a recovery waste stream. We will explore opportunities for the establishment of collection points within Council facilities or in partnership with the commercial sector to provide drop off facilities for non-bin based recyclables.

6.6. Litter and Illegal Dumping

Litter counts routinely show the most common types of litter are cigarette butts, beverage containers, paper, plastic film and wrappers. Most public place bins in Boroondara have recycling options. However as many of the common litter materials are not readily recyclable, installing more recycling bins in concert with garbage bins would not significantly reduce all litter. There may be a number of locations across the municipality where installation of specialised cigarette butt bins would be beneficial. There are also opportunities to benefit from litter prevention strategies and programs initiated at both the regional and state level. This involves joining the MWRRG's Litter Hotspots program, or utilising Sustainability Victoria's toolkits for litter management.

Illegal dumping remains a significant challenge in Boroondara, with dumping of waste a particular issue around areas with large concentrations of multi-unit developments. This can often be a feature of high turnover of rental populations and a lack of awareness of the availability of Council's hard waste collection service. There are opportunities to engage with stakeholders such as property managers, bodies corporate and tertiary education institutions to expand the reach of Council education programs, increase the take-up of the booked hard waste collection service and decrease the incidence of illegal dumping. Where dumping continues to occur at particular locations, Council

will undertake targeted actions with selected stakeholders. This would be a graduated approach to enforcement actions and fines, or coordinating with EPA's litter and illegal dumping taskforce.

6.7. Working with the Commercial Sector to Minimise Waste

The waste collection needs of the commercial and industrial (C&I) sector is generally serviced by private contractors and municipal collaboration with the C&I sector has historically been low. However there is increasing recognition that resource efficiencies and recycling can reduce costs for businesses and increase economic opportunities for the local community.

There are some opportunities to further minimise waste and boost recycling from this sector in Boroondara:

- Council has offered the domestic recycling bin and collection service to approximately 3,300 small businesses which pay a waste charge. Council encourages further participation by non-participating small businesses where viable.
- Extending community waste education programs to include the C&I sector. Collaboration with resource efficiency programs run by organisations such as Sustainability Victoria would help to deliver triple bottom line outcomes and local development and employment opportunities.
- In addition to existing commercial waste and recycling compounds, Council will consider similar compounds at other local shopping precincts or where there is a large aggregation of commercial offices.

6.8. Addressing Waste and Recycling in multi-unit developments

Multi-unit developments in Boroondara present challenges for the provision of waste and recycling collections. The Victorian Government's Better Apartments Design Standards has a requirement for a Waste Management Plan to be developed for each development to deliver improved waste and resource recovery infrastructure and services. The Metropolitan Waste Resource Recovery Group has developed draft guidelines "Improving Resource Recovery in Multi-Unit Developments". These guidelines provide guidance for developments of up to 3 floors and include:

- draft templates to support waste management planning
- draft check list to support council officers assessing waste management plans
- draft check list for developers to assist in preparing waste management plans.

In addition, Sustainability Victoria has published guidelines for waste management in multi-unit developments; they predominantly give guidance relating to developments of 4 storeys and over.

Council provides standard kerbside collection services for developments comprising up to 14 dwellings. Developments comprising 15 or more dwellings are required to submit a waste management plan for approval through the planning permit process. Council endeavours to provide kerbside collection services where shared bin arrangements, sufficient bins storage, and appropriate street frontage for bin placement, align with Council's bin and service logistics requirements. For other developments, a private collection arrangement approved by Council is required.

There is currently no data available to assess the effectiveness of the current waste management plan model. Council will undertake a data capture process for multi-unit developments with waste management plans to understand the effectiveness of the existing waste management plan model, and determine if any further change actions are required.

6.9. Upgrading Infrastructure

It is important that waste and recycling infrastructure is adequate to meet existing and future needs of the Boroondara community. Some upgrades to both the Boroondara RWC and Kew Recycling Centre are needed to ensure they meet best practice standards and encompass continuous improvement. Key issues that influence the need for improvements include:

- introduction of kerbside food waste collections and the need for temporary storage prior to transport off-site for processing
- banning of e-waste from landfills (including the scope of electrical equipment covered by the proposed regulations) and the resulting volumes of material needing to be managed
- establishment of new product stewardship schemes or collection arrangements for materials such as household batteries, air-conditioners, etc.



Kew Recycling Centre

There are also opportunities to enhance the community's waste learning experience by improving the Boroondara Education Centre. The Education Centre does not cater for large groups and there is little space available in its present location for expansion of the centre. Its current use is also inhibited by potential health and safety risks arising from its location within an active drop-off area at the Boroondara RWC.

Council will address these issues in an integrated masterplan for the Boroondara and Kew sites to ensure they meet future infrastructure needs.

6.10. Waste Industry Trends

A number of industry trends may impact on waste and resource recovery in Boroondara in coming years. There is a global industry trend towards establishing advanced waste treatment technologies as an alternative to landfill disposal. This includes technologies such as gasification, pyrolysis, anaerobic digestion and other technologies which recover resources and generate energy from waste. The technologies suited to municipal solid waste require large volumes of waste to justify the large capital outlay involved, and are not considered suitable solely for Boroondara. Opportunities for regional collaboration to establish such facilities are being explored by the MWRRG.

There are also opportunities for developing small-scale technologies targeted to particular waste streams with high calorific value (e.g. anaerobic digesters treating wet organic waste, energy generation from combustion or gasification of dry organic waste). The feasibility of these small-scale facilities in Victoria has generally relied on industry or private sector participation and localised demand for electricity, however some rural councils in Victoria have established micro-scale versions of these technologies for public facilities, e.g. heating of the local hospital or swimming pool.

The number of landfills in Victoria is gradually reducing. The two landfills that Boroondara currently use (at Truganina and Werribee) are expected to continue operations for some decades, but there is likely to be upwards pressure on the gate fees they charge. Increasing landfill disposal costs are likely to increase the feasibility of Boroondara utilising alternative treatment technologies, as the gap in unit costs of each narrows.

Container deposit legislation is established or planned to be introduced in all Australian states and territories except Victoria. Now that all other states have adopted a scheme, there is likely to be

increased pressure on the Victorian Government to follow. The impacts on Boroondara if Victoria adopts a container deposit scheme would depend on the details of the scheme.

The recycling industry is well established, and the kerbside collection service is well used by residents. Over time as kerbside services have become fully embedded and embraced as the norm, the community has become more interested in the full lifecycle of the materials they place in their recycling bins. In 2017 a number of events in the recycling industry in Australia sharpened the focus of these matters, and gave rise to an increased level of community concern regarding the final destination and processing of recyclables. Residents have a keen interest in knowing that the materials they diligently place into their recycling bins for collection are recycled, and are not diverted back to landfill due to recycling industry and commodities market fluctuations. Therefore, Council will identify opportunities for improved monitoring and reporting of the final destination of recyclable materials, and improve the community education and awareness about the lifecycle of recyclables

7. Implementing and monitoring

Council has identified key opportunities in areas of waste minimisation, community education, collection and recovery systems, the commercial sector and waste and recycling infrastructure. Taking advantage of these opportunities will guide Council's strategic approach and actions to achieve each of the objectives is outlined in a separate action plan.

7.1. Evaluation

Council will continue to evaluate performance in line with this Strategy by considering improvements in the following measures:

- the amount of waste generated and diverted for recycling (by kg per household and total %)
- the number of kerbside collection service requests, for example broken bins, stolen bins, bin changeovers (number of requests per 1,000 properties)
- the number of kerbside collections missed (bins missed per 10,000 properties)
- the cost of garbage collection (\$ per garbage bin collected)
- the cost of recyclables collection (\$ per recycling bin collected).

7.2. Accountabilities

For all queries or feedback regarding this strategy, please contact.

Contact Department	Contact number	Contact email
Parks and Infrastructure	9278 4595	Boroondara@boroondara.vic.gov.au

8. References

8.1. Related documents

National Waste Policy: Less Waste More Resources (Commonwealth Government 2009)

Victorian Waste and Resource Recovery Planning Framework (*Environment Protection Act 1970*, amended 2014)

Statewide Waste and Resource Recovery Infrastructure Plan 2017-2046 (Victorian Government 2015)

Metropolitan Waste and Resource Recovery Implementation Plan (MWRRG 2016)

City of Boroondara Council Plan 2013-17 (commitment 8.2 to develop a Waste Minimisation and Recycling Strategy)

Our Low Carbon Future Strategy (City of Boroondara 2009)

8.2. Definitions

AWT	Advanced waste treatment/technology
C&I	Commercial and industrial
EPA	Environment Protection Authority
EPS	Extruded polystyrene
FOGO	Food organics and garden organics
HDPE	High density polyethylene
L	litre
MSW	Municipal solid waste
MUD	Multi-unit development
PET	Polyethylene terephthalate
RWC	Recycling and Waste Centre
MWRRG	Metropolitan Waste and Resource Recovery Group

Appendix 1: Implementation Plan

All actions specified in the *Waste Minimisation and Recycling Strategy 2017* which require funds not included in Council's Strategic Resource Plan will be referred to future budget deliberations and subject to further Council consideration prior to implementation.

Objective	Action	Priority	Resources Required
Reduce the volume of waste deposited at landfills	1.1 Investigate and implement a food waste service to kerbside organics collection	High	Additional may be required.
	1.2 Review number of public place recycling bins and cigarette butt bins	Med	Within existing
Maximise recycling	2.1 Investigate options for additional resources to expand existing programs led by a dedicated waste education officer	Med	Additional may be required.
	2.2 Extend education programs to C&I sector	Med	Additional may be required.
	2.3 Continue to implement guidelines to improve waste management practices in multi-unit developments and improve resource recovery.	Med	Within existing
	2.4 Conduct audits of existing waste services in multi-unit developments	Med	Within existing
	2.5 Implement outcomes from audits of existing waste management practices in multi-unit developments to improve resource recovery	Med	Within existing
	2.6 Identify take-up rate of Council collection and recycling service by businesses and encourage further participation by small businesses where viable	Med	Within existing
	2.7 Explore opportunities for the establishment of collection points within Council facilities or in partnership with the commercial sector to provide drop off facilities for non-bin based recyclables.	Med	Within existing
Achieve sustainable environmental outcomes by providing best practice services	3.1 Review booked hard waste and booked bundled garden waste collection services	Low	Within existing
	3.2 Review street sweeping schedule	Low	Within existing
	3.3 Consider aligning bin colours with Australian Standards, in conjunction with other actions requiring changes to bin stocks	Low	Additional may be required.
	3.4 Review potential for expansion of precinct collections	Low	Within existing
	3.5 Consider joining regional litter programs	Low	Within existing
	3.6 Enforce illegal dumping penalties	Med	Additional may be required.
	3.7 Develop masterplan for Boroondara RWC, Education Centre & Kew Recycling Centre;	High	Additional may be

Appendix 1

Objective	Action	Priority	Resources Required
	consider options for temporary storage of food/garden waste, additional drop-off areas for new recovered materials, expansion of education activities, etc.		required.
	3.7 Actively monitor industry trends that may impact waste and resource recovery (e.g. AWT, container deposit legislation etc.)	Med	Within existing
	3.8 Continue to utilise the annual garbage charge to recover all costs, including overheads for waste and litter management.	High	Within existing
Waste Industry Trends	3.9 Monitor recycling industry trends and developments; obtain and provide information to the community about recycling reprocessing activities	Med	Within existing