



Banyule City Council

Towards Zero Waste Management Plan 2019-2023

A waste avoidance, waste management and resource recovery plan
for the Banyule community

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Draft Only

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Abbreviations

Abbreviation	Full
Council	Banyule City Council
EPA	Environment Protection Authority Victoria
FOGO	Food Organics Garden Organics
Plan	Banyule Zero Waste Plan 2018-2028
SV	Sustainability Victoria
WRRG	Waste and Resource Recovery Group

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Mayor's foreword

The way we think about waste is changing.

The community has been mobilised by recent concentrated media attention, like the ABC's *War on Waste*, and the impacts of China's import restrictions requiring recyclables to have only 0.5 per cent contamination. 'Fast fashion', where people may only wear a piece of clothing once and then discard it, has shocked many people for its wastefulness.

There is a growing awareness that our convenient and fast lifestyles have negative consequences, such as the growing number of items that are designed and produced for a single use only and are then ready for the recycling bin, or worse can't be recycled and need to be deposited in landfill.

'Decluttering' our homes is increasing in popularity – over 600 people have attended workshops run by Council in the last year – and has a direct link to avoiding waste and clutter in the first place. "*Do I need this new item? How long will it last? Hang on, is the old one still good enough?*"

The call to action of the three Rs, 'reduce, reuse, recycle', has been around for a long time and like other grass roots local movements, there is evidence this thinking has been absorbed into the mainstream.

Research shows that we feel good about ourselves when we recycle. But we need to do more than recycle, we need to avoid waste, repair items and reuse them – and feel good about that.

For the past decade, local, state and federal governments have designed policies to avoid and minimise waste and to recover unwanted items, those once considered 'waste', into new materials through recycling processes. The titles of the 2009 *National Waste Policy, Less waste, more resources*, and NSW's *Waste less, recycle more* and the previous Victorian policy *Towards Zero Waste*, neatly capture these policy objectives.

Other government policies have focused on making or encouraging manufacturers to take responsibility for the *full life cycle* of their products. This includes improving the design of products to avoid waste, to use less material in their manufacture and to use materials that are readily recyclable in existing systems. Legislation has established schemes for producers to take back their products, like televisions and computers, for recycling at the end of their working life.

Banyule City Council wants to achieve zero waste in the foreseeable future. We recognise that we cannot achieve this alone as so many things are outside of our control. Achieving zero waste requires all levels of government, manufacturers, the recycling industry, businesses and the community to share responsibility.

We have developed a 4-year draft Zero Waste Plan with a 10 year Vision focused on achieving the changes within our control and we have identified a list of issues that we will advocate to the Victorian and Federal governments to bring about change. We need the community to embrace our vision and rethink waste in all that they do to avoid it, make informed purchasing decisions for the durability and long-term use of items, and try to repair and reuse items as much as possible.

I would like to take this opportunity to thank all of the members of the Community Reference Group who contributed their time, commitment, passion and expertise to identify and debate issues to develop the draft Plan. Their contribution over six months strengthened the draft Plan and drove the aspirational target to achieve zero waste.

Council looks forward to feedback on the draft Plan and how we can work together to achieve zero waste.

Mark Di Pasquale
Mayor

Executive summary

Our vision is for a community motivated to achieve zero waste to landfill by 2030.

In 2018-19 Council will spend over \$8.7 million on waste management services. The cost of providing these services continues to increase due to an indexed Victorian Government landfill levy, increasing fuel prices, and the cost of new plant and infrastructure, particularly to meet legislated environmental operating standards.

Some cost increases are known and can be planned for while others are unknown and more difficult to plan for, such as the fluctuating local and international recycling market prices, recycling impacts from China's policy on what recyclables will be accepted and a potential price on carbon in the future.

These rising costs, as well as the negative environmental impacts of creating waste and sending it to landfill coupled with changing community expectations, are driving the vision to achieve zero waste to landfill.

Zero waste to landfill means that nothing is deposited into landfill and all materials are recycled. This is an aspirational target with many steps along the way, some within Council's control but many that require legislation or state or federal policies that are outside of Council's direct control.

The 10-year plan is based on the waste management hierarchy where avoidance is the most preferable option and disposal to landfill the least preferable. The hierarchy provides a pathway to achieving zero waste.

The plan has four strategic directions:

1. Avoid waste generation.
2. Build, support and strengthen a community culture that is striving to be zero waste.
3. Deliver environmentally responsible and cost-effective recycling and waste services.
4. Advocate to other levels of government to avoid waste, reduce waste to landfill and increase recycling

The primary focus of the four-year Action Plan is on activities that Council can directly control supported by advocacy to other levels of government on a range of identified problem materials to implement the necessary policy changes to achieve zero waste.

To achieve zero waste we need to move the 20,000 tonnes of household waste currently deposited in landfill out of garbage bins. Bin audits show that food waste, which is not currently collected for recycling by Council, makes up 40% of the garbage bin.

An additional 12% of materials in the garbage bin are also recyclable and should be in the recyclables bin. Another 6% are garden organics and should be in the garden organics bin.

Council has a direct role to provide cost-effective recycling and waste management services that reduce community, environment and public health impacts. The biggest short term opportunities that Council can control to achieve zero waste are educating people to sort materials into the right bin and to start collecting food organics with the garden organics collection. This would result in 58% of materials being moved out of the garbage bin in the next one to two years.

Recent television programs on just how much we waste, and where waste goes after leaving our bins, has deepened the commitment and understanding of parts of the community and captured the attention of others. Council will expand its waste avoidance and recycling education programs and promote where to recycle items not accepted in the household recycling collection to move even more items out of the garbage bin.

Council's Waste Recovery Centre (WRC) accepts garbage, recyclables and garden organics and a range of other materials, some for free and some for a fee, that are not accepted in the household kerbside collections. There is some demand to increase the types of materials that can be dropped off at the WRC but the size of the site makes this difficult. Council will investigate the viability of revamping or expanding the site which includes considering any planning obstacles.

This Plan acknowledges that Council cannot achieve zero waste alone as it relies on state and federal government policies, legislation and regulations, such as banning materials that cannot be recycled, reducing unnecessary packaging and establishing product stewardship schemes where the producers of items are responsible for designing products with minimal waste and where all packaging and products are recyclable. Producers need to be responsible for taking items back at the end of productive life to recycle into new products.

Achieving zero waste requires the waste sorting and processing industry to find new ways to sort materials more effectively and to reprocess the materials into new products that will be purchased.

Another role of Council is to show leadership and advocate on behalf of the community to minimise waste according to the waste hierarchy. The Plan has identified a range of areas for advocacy to the state and federal governments and to industry.

A total of 32 actions are proposed by the Plan. Whilst all are important to achieving zero waste, the following are considered key actions for the Banyule community over the next four years as they are actions which could require financial investment, changes to current service provision, or necessitate cultural change by the entire Banyule community to successfully implement:

- Development of a business case (including financial costings) for commencement of a food organics garden organics (FOGO) kerbside collection service for households that enable food waste to be recycled.
- A business case (including financial costings) for expanding the offering provided by the Waste Recovery Centre (including a re-sale shop) based on planning restrictions and physical constraints of the site.
- A review of the current booked hard waste service including whether the service needs be modified to provide residents with convenient access to an E-waste service in response to the landfill ban which commences 1 July 2019.
- Develop and deliver community education programs to avoid waste and support the diversion of resources from landfill for reuse and recycling as much as possible.
- A review to determine if having a separate waste charge is a more appropriate method to fund waste services than the current funding model.
- A review to investigate if Council can provide or coordinate waste collection services to difficult to access properties and higher density developments.

By successfully implementing the key actions above within the four year period of the plan, Banyule could achieve an increase of diversion from landfill from 51% to 64%.

Funding for the implementation of the plan will be provided through the recurrent operating budget for actions that can be completed with existing resources. Actions that require additional resources or additional infrastructure will be referred to Council for funding through the capital works budget process.

The four-year Action Plan will be monitored and evaluated annually with the results reported back to the community.

Criteria to be reported on annually will include:

- total kerbside garbage to landfill (tonnes).
- total kerbside greenhouse gas emissions to landfill(%).
- total kerbside diversion from landfill (%).
- total kerbside organics diversion from landfill.
- total kerbside recyclables (tonnes).
- total kerbside waste (kilograms per collection household).

1 Context

1.1 Why we need a zero waste plan

In 2018-19, Council will spend over \$8.7 million on waste management services that includes household kerbside collections and disposal, providing and emptying rubbish bins in streets, shopping centres and parks, education to avoid and reduce waste and recycle correctly, and running the Waste Recovery Centre.

The cost of waste processing and landfilling continues to rise each year. Increasing fuel costs, an indexed landfill levy, an imminent Victorian Government ban on depositing e-waste in landfill and the costs of Council's ongoing education programs directly impact on the cost of these services.

So too does the cost of new plant and infrastructure to reduce waste to landfill and to increase recycling, particularly to meet legislated environmental operating requirements such as moving from open windrow to in-vessel composting of organics.

Costs have been impacted by the state of recycling markets, both locally and internationally. In January 2018, China's National Sword Policy set a level of contamination of recyclable materials of 0.5 per cent that Australia cannot meet, placing additional pressures on the cost of recycling and uncertainty about where these materials will go.

Unknown costs, such as a potential price on carbon in the future would also impact on the cost of services.

Rising costs, negative environmental impacts of creating waste and sending it to landfill, as well as Victorian Government policy, Council policy and changing community expectations are all driving Council's plan to achieve zero waste in the long-term.

The draft Towards Zero Waste Plan challenges out of date thinking that items no longer of use to an individual are simply 'waste' to be thrown into the bin without a further thought as it becomes someone else's problem. It strives to replace this with an understanding that 'waste' is actually a resource to be used in a variety of ways in our existing economy, for example to avoid digging up new materials to make products.

The community is already highly engaged in waste and recycling issues but needs support and education to avoid, reduce, reuse and recycle more effectively.

1.2 What is zero waste?

'Zero waste' is shorthand for 'zero waste to landfill' which means that nothing is deposited into landfill and all materials are recycled. This is an aspirational target with many steps along the way.

Achieving zero waste involves avoiding waste in the first place, repairing items to extend their useful life and reusing items as much as possible before sending them off to be recycled.

It involves rethinking what we buy to ensure a new product is actually needed, and buying items that have a long life. It involves rethinking what is defined as 'waste' – if it is no longer of use to us does that mean it is destined for recycling or the landfill, or can it be repaired or used by someone else.

Zero waste is an aspirational target that will require Council and all of the community to work together to rethink our purchasing and use of materials. Avoiding waste, repairing and reusing items will all contribute to achieving zero waste.

Council cannot achieve zero waste alone as it relies on state and federal government policies, legislation and regulations. Examples include banning materials that cannot be recycled, reducing unnecessary packaging and establishing product stewardship schemes where the producers of items are responsible for designing products with minimal waste and where all materials are recyclable and producers are also responsible for taking items back at the end of productive life to recycle into new products.

It also requires the waste sorting and processing industry to find new ways to sort materials more effectively and to reprocess the materials into new products that will be purchased. Governments, businesses and individuals need to increase their purchasing of products with recycled content to ensure strong and ongoing market demand for these products.

Council acknowledges that many of these factors are outside of its direct control and has developed an Action Plan that is primarily focused on the actions within Council's control, but includes a wide range of actions to advocate for change for those factors outside of Council's control.

Achieving zero waste will bring environmental, economic, social and health and well-being benefits.

What is zero waste?

The true goal of zero waste is not just zero waste to landfill or zero waste to energy, but redesigning our entire cycle of resource extraction, consumption and discard management so no resources are wasted at any point along the way.

1.3 Banyule's zero waste challenge

In 2018, over 43,000 tonnes of waste were collected from households in Banyule. Of this:

- > Over 20,000 tonnes of waste were deposited in landfill.
- > Over 12,000 tonnes of recyclable materials were recovered for recycling.
- > Over 11,000 tonnes of garden organics were recovered for reprocessing.

This is split into 52% of recyclables and garden organics recovered for recycling and 48% landfilled.

However, 2015 bin audits identified opportunities to immediately reduce the amount of waste deposited in landfill if households improved sorting their waste into the correct bin as 6%, or 1,200 tonnes over one year, of garden organics and 10%, or 2,000 tonnes over one year, of recyclables were in the garbage bin.

The major opportunity to reduce waste to landfill is if Council accepted food organics in the garden organics collection as 40%, or 8,000 tonnes over one year, of the garbage bin were food organics.

In total, 58% of materials in the garbage bin are potentially recyclable and this plan is focused on removing these materials to achieve zero waste to landfill. If 100% of these materials were sorted into the correct bins this would reduce waste deposited to landfill by over 11,400 tonnes (or 58%) based on no other changes.

1.4 Vision and directions

Our vision is that Banyule is a community motivated to achieve zero waste to landfill by 2030.

The plan is based on four strategic directions which are to:

1. Avoid waste generation.
2. Build, support and strengthen a community culture that is striving to be zero waste.
3. Deliver environmentally responsible and cost-effective recycling and waste services.
4. Advocate to other levels of government to avoid waste, reduce waste to landfill and increase recycling.

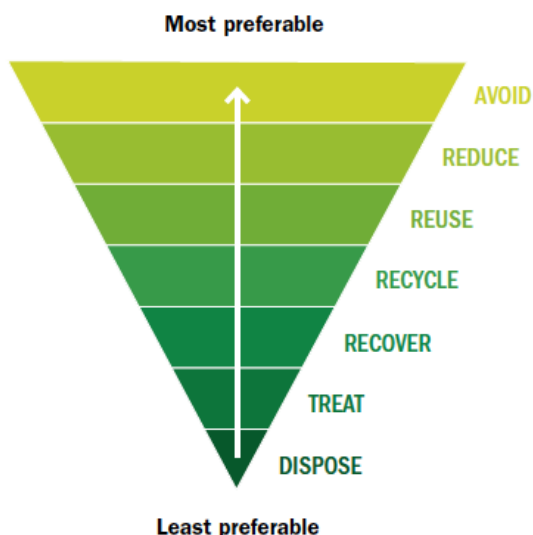
Successful implementation of the strategic directions and proposed action plan will result in the largest increase in the diversion of waste from landfill since 2005. This is within the capability of Council to achieve within the four year action plan period.

If the four year action plan is implemented in full any significant increase in diversion from landfill from the kerbside collection service thereafter will require considerable support and action from state and federal governments, new reprocessing technology, and increasing the size of recycling and recovery industries in Australia.

To achieve zero waste to landfill by 2030 will require the amount of kerbside waste sent to landfill to halve every four years to 2030. A goal of zero waste to landfill by 2030 is an aspirational objective that can only be achieved by Council through advocacy.

The plan is based on the waste management hierarchy which is the underlying principle of waste management policies in Australia and is included in the *Environment Protection Act 1970*. Figure 1 shows the order of preference for waste management where avoiding waste is the most preferable and disposing of waste to landfill the least preferable. Sometimes 'refuse' is included above 'avoid'.

Figure 1 Waste management hierarchy



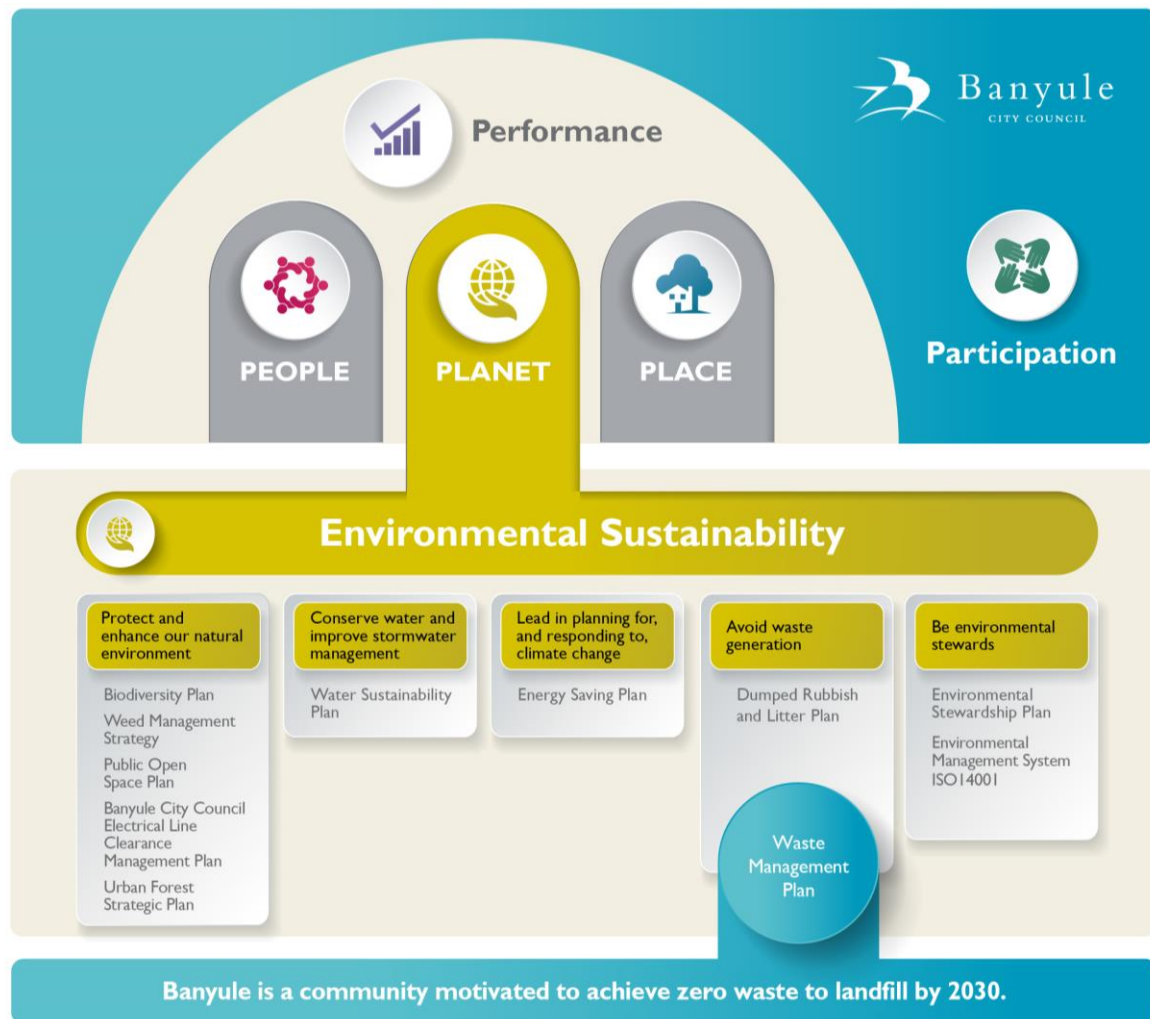
The vision aligns to Council's overarching Environmental policy statement¹ that Council is committed *to encouraging the efficient and sustainable use of resources while minimising waste and pollution* and the *Banyule Council Plan 2017-2021* to be a *green, sustainable and vibrant place for a healthy, connected and inclusive community*.

The Zero Waste Plan will help achieve Council's City Plan key direction to '*deliver appropriate action on climate change*' and the Energy Plan target to achieve carbon neutrality by 2020. Council will reduce greenhouse gas emissions and help to adapt to climate change already occurring through reducing its energy consumption and waste generation.

Figure 2 shows all of the plans, including the Zero Waste Plan, that support the achievement of the *Planet* strategic objective. A key direction of *Planet* is **avoiding waste generation**. (Appendix A includes more detailed information from the Council Plan 2017-2021 (Year 2) related to this Plan.)

¹ last amended December 2010

Figure 2 Council Plan *Planet* objective supporting plans



The diagram has been updated to reflect the Banyule Council Plan 2017-2021

1.5 Purpose and scope

This plan provides a 10-year outlook for Council to plan for its waste avoidance and waste and recycling services. It includes a four-year action plan. The main focus is on municipal solid waste, that is waste generated by households and Council operations, but it also considers actions for commercial and industrial waste and construction and demolition waste.

Figure 3 shows the types of activities, or scope, of the plan.

Figure 3 Scope of the zero waste plan

Infrastructure	Collections	Services	Data	Strategic Framework	Challenges and opportunities	Innovation opportunities	Advocacy
<ul style="list-style-type: none"> Waste Recovery Centre kerbside bins public bins 	<ul style="list-style-type: none"> recyclables garden organics garbage booked hard waste and bundled branches commercial multi-unit developments shopping centres parks and gardens sports facilities 	<ul style="list-style-type: none"> community engagement and education customer service 	<ul style="list-style-type: none"> waste stream quantities population growth impact of demographics and population growth on waste generation service data 	<ul style="list-style-type: none"> Council Plan and other plans Victorian Government Metropolitan Waste and Resource Recovery Group Australian Government 	<ul style="list-style-type: none"> recovering food organics sorting materials into the correct bin increase in multi-unit developments population growth and densification Avoiding waste 	<ul style="list-style-type: none"> new technologies new facilities 	<ul style="list-style-type: none"> product stewardship and producer responsibility banning specific materials community leadership reinvestment of the Victorian landfill levy

This plan builds on the achievements of the Banyule 2014-19 Waste Management Plan, as well as all the previous work.

This plan does not specifically address dumping and litter, as it sits alongside Banyule's *Dumped Rubbish and Litter Plan 2017-2021* as shown in Figure 2.

1.6 Strategic framework and policy context

In developing this plan Council has considered national and state policies to reduce waste to landfill and recycle more effectively as well as ensuring Council's waste and recycling services align with the Council Plan 2017-2021.

Figure 4 shows the national, Victorian and Council policy context and relationships, which are explained further in this section.

Commonwealth context

National Waste Policy 2009
National Product Stewardship Act 2011

Victorian context

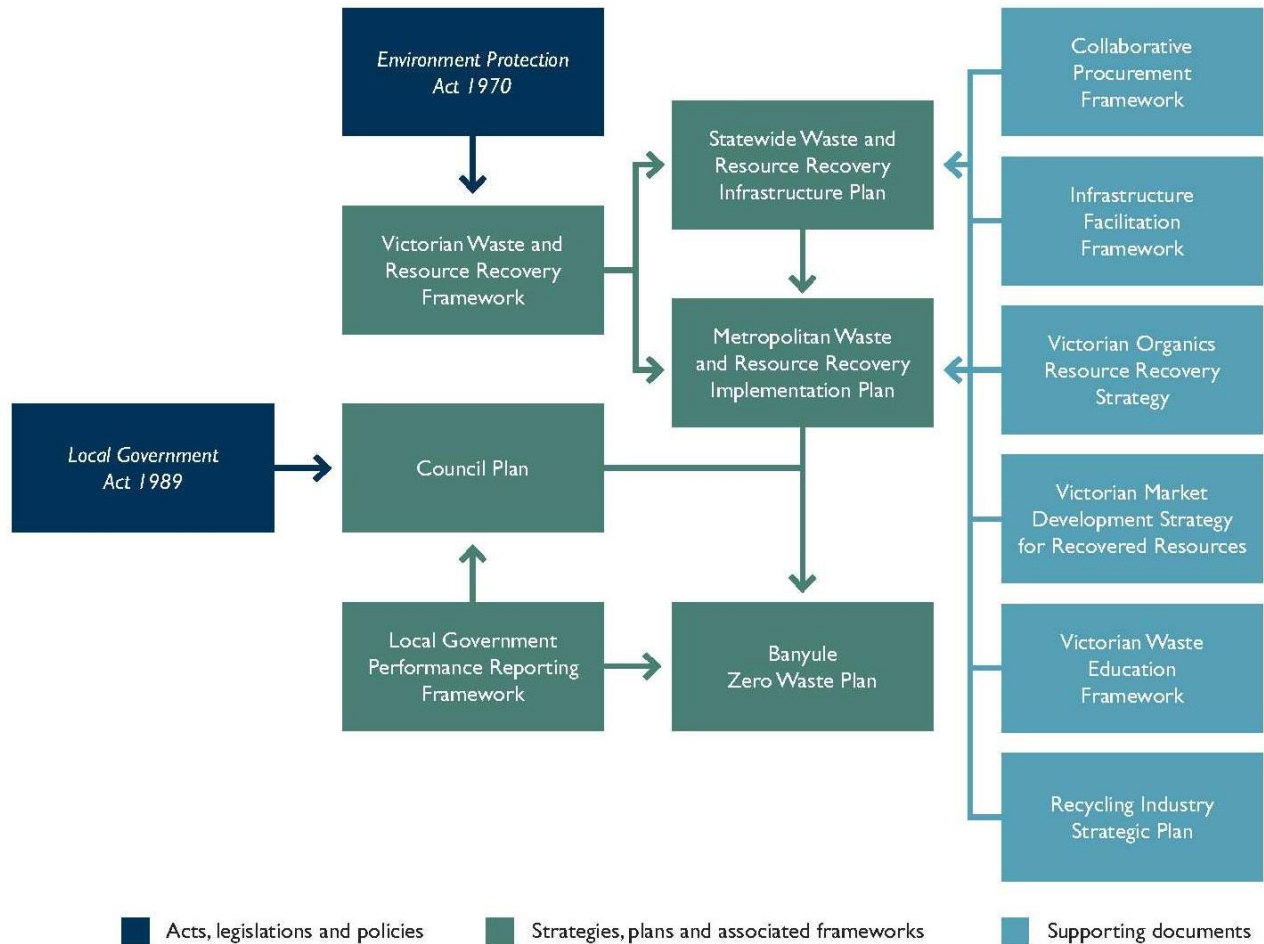


Figure 4 The National, Victorian and Council policy context

1.6.1 National Waste Policy: Less Waste, More Resources 2009

The 2009 *National Waste Policy: Less Waste, More Resources* set Australia's waste management and resource recovery directions to 2020.

There is a strong focus on *product stewardship*, which is a federal government-led approach to manage the impacts of products and materials. It acknowledges that those involved in producing, selling, using and disposing of products have a shared responsibility to ensure that those products or materials are managed in a way that reduces their impact, throughout their lifecycle, on the environment and on human health and safety.

The National Television and Computer Recycling Scheme was established in 2011 under the Federal *Product Stewardship Act 2011*. *Paintback*, a product stewardship scheme for waste architectural and decorative paint has been developed.

The 2016-17 list of priority items identified for action include:

- > plastic microbeads and products containing them
- > batteries
- > photovoltaic systems
- > electrical and electronic products
- > plastic oil containers.

Latest decisions – April 2018²

Australia's environment ministers met on 26 April 2018³ to set a sustainable path for Australia's recyclable waste in response to the impacts of China's 'Green Sword' Policy (refer 0 pg. 9).

Ministers agreed to:

- > Update the 2009 Waste Strategy, which will include circular economy principles, by the end of 2018.
- > Encourage waste reduction strategies through greater consumer awareness, education and with industry leadership.
- > Increase our recycling capacity by expanding and developing the recycling industry to take the waste that would have gone to China and grow domestic capabilities.
- > Increase the demand for recycled products by advocating for increased use of recycled materials in the goods that government and industry buy, such as paper, road and construction materials, and to collaborate on creating new markets for recycled materials.
- > Explore opportunities to advance waste-to-energy and waste-to-biofuels projects, as part of a broader suite of industry growth initiatives, recognising the reduction, reuse and recycling of waste is a priority, consistent with the waste hierarchy. This will include support from the Clean Energy Finance Corporation and the Australian Renewable Energy Agency.

Ministers provided updates on:

- > **Microbeads:** Ministers were pleased to announce that a voluntary phase-out of microbeads, initiated in 2016, is on track – with 94 per cent of cosmetic and personal care products now microbead-free. Ministers remain committed to eliminating the final six per cent and examining options to broaden the phase out to other products.
- > **Food waste:** Ministers reaffirmed their commitment to halving Australia's food waste by 2030. Ministers agreed to align their community education efforts to cut food waste and to encourage residual food waste to be composted.
- > **Product waste:** Ministers fast-tracked the development of new product stewardship schemes for photovoltaic solar panels and batteries. This builds on existing successful industry-led product stewardship approaches that manage products like televisions and computers, tyres and oil.

1.6.2 Victorian framework

The Victorian *Environment Protection Act 1970* is currently being reviewed with an updated Act due for release later in 2018.

Victorian landfill levy

A levy for each tonne of waste disposed of at a licensed landfill in Victoria was established under the Environment Protection Act in 2002.

Landfill levies are used solely for the purposes of environment protection and fostering environmentally sustainable use of resources and best practice in waste management. They fund the activities of EPA Victoria, Sustainability Victoria and the waste and resource recovery groups, helping to establish waste management infrastructure, industry waste reduction programs, education programs, regulatory controls and enforcement. Levies also provide an incentive to minimise the generation of waste, sending a signal to industry that the government supports efforts to develop alternatives to disposal to landfill.

² <http://www.environment.gov.au/about-us/mem>

³ Ministers agreed to have a teleconference in mid-June to discuss progress on recycling, and to meet in late 2018 to further progress delivery of the commitments made on 26 April 2018.

1.6.2.1 Victorian policy

The vision of Victorian Government is for Victoria to have an integrated statewide waste and resource recovery system that provides an essential community service to:

- > protect the community, environment and public health
- > recover valuable resources from our waste
- > minimise long term costs to households, industry and governments.

The policy seeks to achieve a waste and resource recovery system that:

- effectively manages the expected mix and volumes of waste
- reflects the principles of environmental justice to ensure that impacts on the community, environment and public health are not disproportionately felt across communities
- supports a viable resource recovery industry
- reduces the amount of valuable materials going to landfill.

The 30-year *Statewide Waste and Resource Recovery Infrastructure Plan* (state infrastructure plan), one metropolitan and six 10-year regional implementation plans provide the roadmap for investment, procurement, markets and organics recovery.

The state infrastructure plan has six long term strategic directions:

1. To maximise the diversion of recoverable materials from landfills.
2. To support increased resource recovery.
3. To achieve quantities for reprocessing.
4. To manage waste and material streams.
5. To maximise economic outcomes, provide cost effective service delivery and reduce community, environment and public health impacts.
6. To facilitate a cost effective state wide network of waste and resource recovery infrastructure.

Figure 4 lists the strategies to support the strategic directions.

The Victorian Government plans to ban e-waste from being deposited in landfill from 1 July 2019 and has held consultation on banning single-use plastic shopping bags with the report summarising the feedback and way forward due out soon.

1.6.2.1.1 Metropolitan Waste and Resource Recovery Group

The Metropolitan Waste and Resource Recovery Group supports Melbourne's 31 metropolitan councils to work with their communities to minimise waste and maximise resource recovery.

The *Metropolitan Waste and Resource Recovery Implementation Plan* (shown in Figure 4) provides a roadmap for waste and resource recovery services until 2026. It includes four strategic directions that Council has considered in the development of this plan:

- > reduce waste sent to landfill
- > increase organic waste recovered
- > deliver community, environmental and economic benefits
- > plan for Melbourne's growing population.

Council has developed the plan to meet the legislative requirement of the *Environment Protection Act (1970)* that it must perform waste management functions which are consistent with the Metropolitan Waste and Resource Recovery Implementation Plan.

1.7 China's National Sword policy and impacts

Coined the 'Green Sword', China introduced very stringent restrictions on the importation of waste through its 'National Sword Policy' on 1 January 2018 that has significantly impacted on Australia and other countries around the world that used to send their recyclable materials to China. It will result in councils paying for recycling when before many, including Banyule, received a rebate for the materials.

The policy aims to improve China's national environmental standards and strictly prohibits the importation of recyclable waste with contamination levels exceeding 0.5 per cent compared to previous limits of about 10%. Although the volume sent to China represents just four percent of Australia's recyclable waste by weight this includes 35 per cent of Australia's recyclable plastics and 30 per cent of recyclable paper and cardboard. The volume (as opposed to weight) has had a significant impact to Australian recyclables processors and the cost structure of the Australian recyclables market.

See Section 1.6.1 for details on the Australian and state governments' response to the new policy.

1.8 Increased media focus on waste

In 2017 and 2018 there has been an increased media focus on how much we waste as well as what actually happens to waste after it has been collected. Examples include:

- > ABC's War on waste television series and podcast.
- > ABC's Four Corners investigation into how the waste sector works and a great deal of media attention about the impact to Australia's recycling system resulting from implementation of China's National Sword Policy.
- > The recyclables stockpile fire which occurred at the largest materials recovery facility located in Coolaroo in, Melbourne's north.
- > The Stawell tyre pile.

The attention has engaged new people in the community and deepened the understanding of others who were already engaged. Councils across Australia, including Banyule have tried to respond to their communities to provide information on council's and other recycling services and how to avoid waste and recycle more.

1.9 Recycling services and infrastructure in Australia

Some materials are not recycled in Australia because it is too expensive and the cost outweighs the benefits, there are insufficient quantities of materials to make recycling viable, or there are no technologies currently available. Councils can advocate to the state and federal governments to find new and viable ways to recycle these materials to successfully establish a thriving circular economy where 'waste' is recycled into new products. This boosts jobs and economic growth supported by establishing a strong and ongoing demand to purchase the products by governments, businesses and the community.

1.10 Emerging technologies

Waste to energy

Turning waste into energy is an opportunity to extract value from waste that would otherwise be disposed to landfill. Generating energy from waste can add renewable energy to Victoria's energy mix and reduce the reliance on landfill, which also reduces greenhouse gas emissions.

In 2017, the Victorian Government released a discussion paper on converting waste to energy to support the development of new technologies, including anaerobic digestion and thermal treatment of waste. The consultation has closed and a waste to energy policy is scheduled to be released in 2018.

The government has established a \$2.38 million Waste to Energy Infrastructure Fund as part of the Government's Climate Change Innovation and Jobs Initiative to help businesses and water corporations upgrade waste management practices and support projects that will deliver renewable energy capacity.

The Government supports the waste management hierarchy so energy from waste is an option only after reduce, reuse and recycle.

Advanced waste and resource recovery technologies business case

The Metropolitan Waste and Resource Recovery Group has been funded by the Sustainability Fund to prepare an advanced waste and resource recovery technologies business case and procurement strategy to provide infrastructure and services to process residual waste currently disposed of in landfill.

The development of the business case is a complex, multi-faceted process that involves technical research coupled with strong collaboration between the Group, state and local government, and industry.

2 Where we are now

2.1 Performance and achievements

Some of the key actions and achievements by Council in 2017 include:

- > providing recycling and garbage collections to over 48,600 households and over 500 commercial properties
- > providing garden organics collections to over 48,600 households
- > providing almost 22,500 booked hard waste and bundled branch collections
- > recovering 52% of the combined total of garbage, recycling and garden organics from kerbside collections
- > development of the *Dumped Rubbish and Litter Plan 2017-2021*.

The Banyule community rated waste management the top performer in the 2018 Local Government Community Satisfaction Survey. Council scored 75 which was significantly higher than the statewide average of 70, and on par with the Melbourne metropolitan average of 75.

In terms of importance, waste management scored 83 and is considered the most important Banyule Council responsibility. Waste management has consistently been rated the most important service area over time.

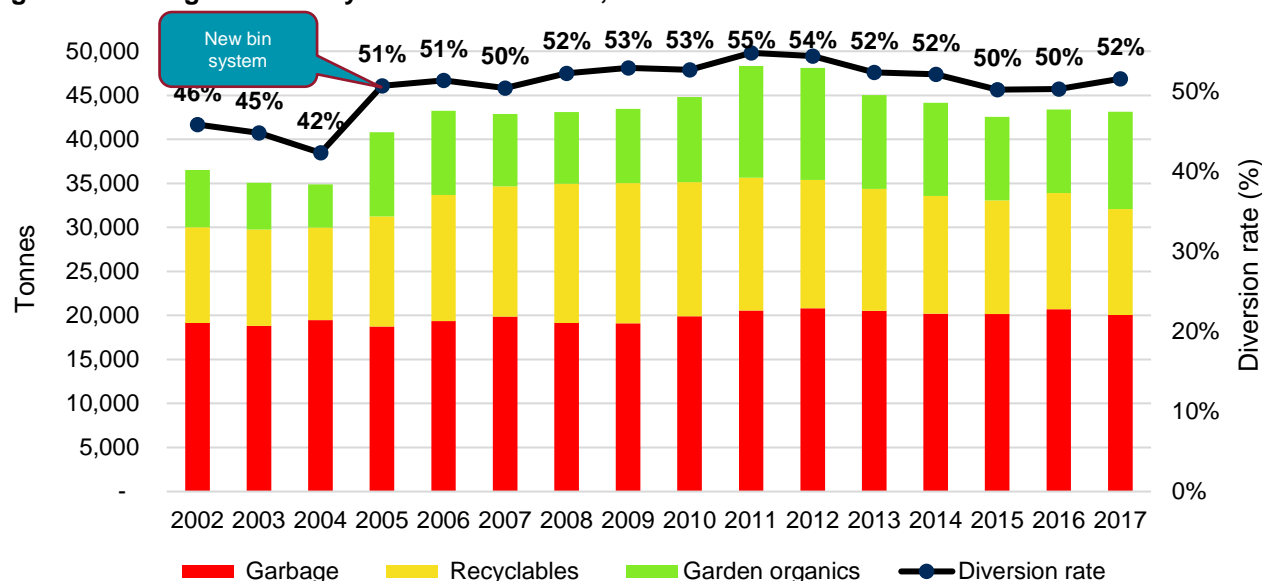
2.2 Waste generation and recycling

In 2016-17, over 43,000 tonnes of waste were collected from households in Banyule. Of this:

- > Over 20,000 tonnes of waste were deposited in landfill.
- > Over 12,000 tonnes of recyclable materials were recovered for recycling.
- > Over 11,000 tonnes of garden organics were recovered for reprocessing.
- > 52% of total waste collected was recovered for recycling.

Figure 5 shows the tonnes of garbage, recycling and garden organics collected between 2001 and 2017. It also shows the 'diversion rate' which is calculated by dividing the tonnes of recyclables and garden organics recycled (minus any contamination), by the tonnes of recyclables, garden organics and garbage collected.

Figure 5 Waste generation by collection streams, 2015-2017



In 2004 the introduction of the best practice three-bin recycling system made it simpler and easier for households to recycle and resulted in the single largest increase in the tonnes of recyclables collected, up 19% from the previous year, and almost doubled (96%) the tonnes of organics collected. Combined, this resulted in an increase of nine percentage points in the diversion rate (Figure 5).

Since the current bins system was implemented in 2004 the diversion rate has been relatively constant⁴. This highlights that achieving increases to the rate of diversion from landfill requires significant change to the collection system if changes are unable to be implemented in bin contents sorting after collection in a materials recovery centre.

The next opportunity for a big increase in the diversion rate, based on the experience of other councils, occurs when Council starts to accept food organics in the garden organics collection.

Introducing the three-bin best practice recycling system in 2004

Sustainability Victoria developed the best practice system to reduce waste to landfill and increase recycling. As well as the 80L garbage bin already provided to households for weekly collection, Banyule households received a new 240L bin for paper and recyclable containers to be collected fortnightly and a 120L garden organics bin to be collected fortnightly.

This was a major improvement for households that had previously tied paper in bundles and placed recyclable containers into a 120L bin, that were both collected fortnightly. Council collected garden organics fortnightly but households had to purchase their own bins.

Households embraced the new system increasing the quantity of recyclables collected by nearly 20% in the first year and an additional 14% in the following year.

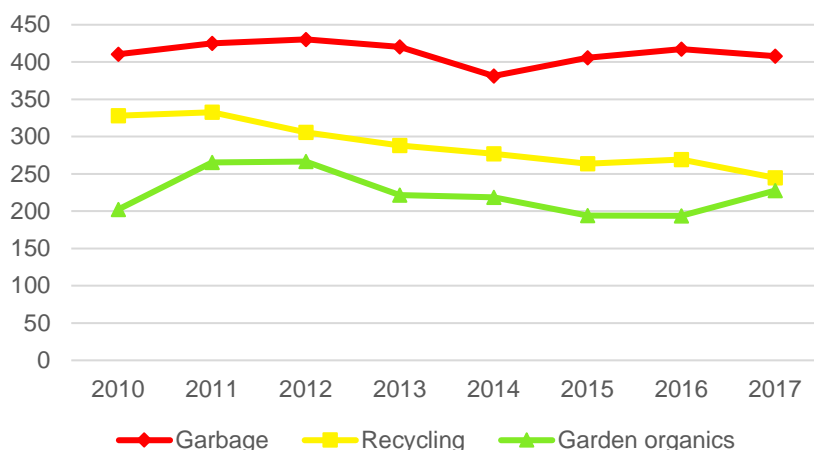
Council also collected nearly 1,800 tonnes from households through booked hard waste collections, with nearly one third (32%) recovered for recycling.

Figure 6 shows the average number of kilograms households generated each year between 2010 and 2017. Garbage declined slightly in 2014 but overall the quantity generated has been fairly stable at about 410 kilograms. As stated, the quantity of recyclables collected has steadily declined which can be attributed to the reduction in newspapers and making packaging lighter. The generation of

⁴ During this period the types of recyclables households need to dispose of has changed, for example a decrease in newspapers as people move to reading news and information online. Weather patterns, such as high rainfall levels or drought, results in fluctuations in the amount of garden organics generated

garden organics is closely related to weather changes, decreasing during droughts and increasing during periods of high rainfall.

Figure 6 Household yield (kg) for garbage, recycling and garden organics, 2010-17



2.2.1 Analysis of what is in the bins

Council conducted bin audits in 2015 which provide a snapshot in time of what materials were in each of the three bins. The results highlight some key challenges to achieve zero waste; one is a system constraint and another is behaviour, education and information.

Only garden organics are currently accepted in the organics collection. Council is considering collecting food organics as well, which made up 40% of the weight of the garbage bin in the audit (Figure 7). The existing garden organics processor has capacity to take food organics, which would be used to make recycled organic products. Removing food from the garbage bins, and therefore landfill, would reduce methane produced by the food as it breaks down. This requires a change to the collection system and an extensive education program to ensure that only garden and food organics are deposited in that bin as the contamination rate must be under 1%.

If the 3% of textiles in the garbage bin were in good condition they could have been donated to a charity.

Figure 7 highlights some of the household behaviour challenges as 6% of materials in the garbage bin are garden organics that should be in the organics bin and 12% are recyclable materials that should be in the recyclables bin. There is insufficient information to know if incorrect sorting is due to a lack of knowledge of what is actually recyclable, an unwillingness to separate materials, overfull bins, or due to other factors.

Adding all of the materials currently accepted in the recyclables and garden organics bins means 18% of the weight of the garbage bin is lost resources deposited into landfill instead of being recovered for recycling. If food organics were included with garden organics, the potential for materials to be recovered is 58%.

Figure 7 Composition of the garbage bin, 2015



A major challenge to achieving zero waste can be seen from the 30% of 'other' materials in the garbage bin. Figure 8 shows the detailed breakdown of these materials.

Some of these items are recyclable, such as expanded polystyrene (EPS) or soft plastics, but they are not accepted in the household recyclables bin because the existing sorting systems cannot process them. However, these materials can be taken elsewhere for recycling. Some materials are not recyclable in Australia or at all.

Figure 8 Detailed breakdown of other materials in the garbage bin

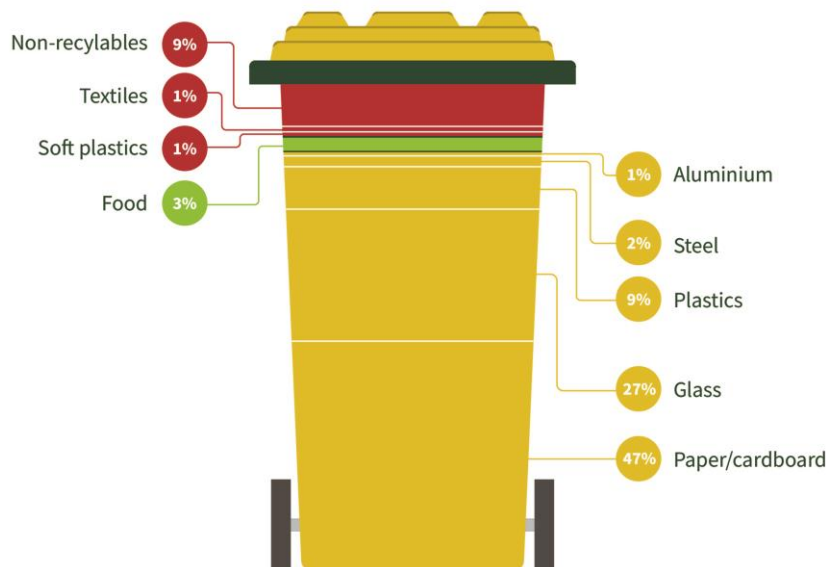


¹ Does not add to 30% due to rounding of the 70% of other items

Figure 9 shows 14% of the items should not have been placed in the recyclables bin, and this is known as 'contamination'. Note that 14% contamination is a snapshot from the audit and Council's collector reports an average annual rate of under 10%, which has been acceptable. However, as stated, China now requires a contamination rate of 0.5% or less to accept materials and this has impacted on recycling in Australia but it is too early to understand the full impacts. There is greater pressure to increase sorting of materials to ensure such low contamination rates.

Research has shown that causes of contamination can be because households believe they are sorting correctly but not fully understanding what is accepted, some people simply do not care or their other bin is full and they place the overflow in another bin. Households placing food, which made up 3% of all materials, into the recyclables bin is an ongoing challenge for many councils.

Figure 9 Composition of the recyclables bin, 2015



It was estimated that 1% of the garden organics bin was contamination (Figure 10), which is a great result. This indicates households understand what to put in this bin although there is some room for improvement to reach zero contamination. Achieving zero waste requires moving the 6% of garden organics from the garbage bin into the garden organics bin.

Figure 10 Composition of the garden organics bin, 2015



Summary

- > 18% of materials in the garbage bin can be recycled in the existing recyclables bin (12%) or garden organics bin (6%)
- > If Council starts accepting food organics in the garden organics bin this would move over 8,000 tonnes from landfill for reprocessing.
- > This means a total of 58% of materials in the garbage bin could be recycled.
- > 3% of the recyclables bin is food organics.
- > If 100% of these materials were sorted into the correct bins (including collecting food organics) this would reduce waste deposited to landfill by over 11,400 tonnes (or 58%) based on no other changes.
- > This could increase the diversion rate from 53% to 80%.

Issue	Opportunity
Household garbage generation has not shown a decrease in the last seven years	Support households to avoid waste and sort correctly Accept food organics in the garden organics collection which would result in up to 40% reduction in the weight of the garbage bin
Non-recyclable items in the recyclables bin	Educate households to sort correctly
Materials in the garbage bin belong in the recyclables bin and are lost resources	Educate households to sort correctly
Food waste makes up 40% of materials in the garbage and 3% in the recyclables bin	Accept food organics in the garden organics collection
Recyclable materials not accepted in the existing system by processors	Advocate to industry and the state government to find sorting improvements
Plastics and other items that are discarded after one use	Advocate to industry, state and federal governments to restrict single-use products
Problem materials that cannot be recycled such as nappies, plastic composites (e.g. coffee cups).	Advocate to state and federal governments for product stewardship schemes and for recycling facilities
Problem materials that are costly to recycle, not readily recyclable in Australia or are not recyclable and which may also pose environmental risks when not disposed of correctly	Advocate to state and federal governments

2.2.2 Population growth and waste generation

In 2018, the population of Banyule was 131,178 and there were 50,190 households. The forecast increase in population between 2018 and 2026 is over 8,800 people and over 3,800 households that Council will need to provide services to. Population changes that impact on waste generation include:

- > demographics – the age of residents, and the number of children in nappies
- > dwelling type – detached house, medium and high density
- > household composition – the number of people living in each dwelling.

Council provides some services to multi-unit dwellings if the bins can fit on the kerbside without obstructing pedestrians, traffic or car parking. There is an increase in multi-storey multi-unit developments, which commonly have waste bins in basements and require a commercial waste collection service as Council does not currently enter private property to empty bins. Council has been investigating options to provide services to multi-unit developments to improve recycling rates as historically, multi-unit developments across Victoria have very low rates of recycling.

2.3 Services

2.3.1 Kerbside collections

Table 1 provides details of Council's kerbside collection services.

Table 1 Household kerbside services

	Recyclables	Garden organics	Garbage	Booked hard waste and bundled branches	Commercial ¹
Collection frequency	Fortnightly	Fortnightly	Weekly	2 per year	Weekly
Bin size	240L	120L	80L	Hard waste: 1 cubic metre Bundled branches: 12 bundles up to 150 cm long and 30 cm wide; 2 cubic metres	240L
Options	no other options	240L for extra charge	120L for extra charge		Additional 240L bins charged
Properties serviced, 2016-17	48,619	48,619	48,619	nearly 22,500 collections	535

¹ User pay service

2.3.2 Other services

Council provides a number of other services that were listed in Figure 3 and include:

- > providing and emptying bins in public places such as shopping centres, parks and gardens and sporting facilities
- > community engagement and education
- > customer service
- > data collection and analysis.

Details of Council's waste education programs are included in Appendix B.

2.3.3 Multi-Unit Developments and Challenging Properties

Not all Banyule residential properties receive a Council provided collection service. Some properties receive a partial service whilst others receive none at all. The type of collection service a property receives from Council is determined by a range of factors including:

- Dwelling design
- Property shape
- Number of residences on a property
- Whether the property has sufficient nature strip frontage to accommodate the amount of bins required, or is located in the bowl of a cul-de-sac
- The size and type of bins required by the premises is not compatible with the collection vehicles Council operates

- If the collection point for waste is located on public or private land or, the only available collection location is on a footpath, or requires a collection vehicle's mechanical bin grab arm to reach across a footpath
- If providing a collection service would have an adverse negative community impact (for instance impede traffic flows)
- Or, collection entails a safety risk for the collection vehicle and operator(s).

Property types most likely to be unable to receive a council provide waste collection service include: multi-unit apartment blocks, large townhouse developments, battle-axe properties, gated communities, and properties accessible only via private roads.

In these circumstances the property is required to be fully or partially-self-sufficient for their waste services. On premise waste collection costs for these properties are higher than when Council is able to include the property as part of the existing kerbside collection service.

With the housing mix in Banyule likely to include more properties of the types Council is currently unable to provide a collection service for, examining if Council can either contract or directly provide a waste service suitable for these property types is worth considering.

2.3.4 Waste Recovery Centre

The Banyule Waste Recovery Centre has been operating on its current site since 1975 and is an important part of the Greater Melbourne transfer station infrastructure network. The Transfer Station has undergone a number of modifications and up-grades throughout its operating life.

Many services are free for households. Materials accepted include:

- > Free for households
 - glass bottles and jars
 - cans (steel and aluminium)
 - rigid plastic containers
 - paper and cardboard (household quantities only, not commercial quantities)
 - motor oil (up to 20 litres)
 - paint (up to 100 litres, maximum 20 litre can)
 - batteries
 - gas cylinders
 - fluorescent lights
 - clothes
 - juice and milk cartons
 - TVs
 - computers and peripherals
 - specified hazardous materials.
- > Materials with disposal charge:
 - garbage
 - garden organics
 - fridges and freezers
 - tyres
 - mattresses
 - air conditioners
 - rubble.

Activity and financial performance

Between 2005-2006 and 2014-2015, the quantity of waste disposed at the Waste Recovery Centre declined by 43% and resulted in a financial loss. In the last two years, Council has been attracting commercial waste operators to capture a greater share of the existing Melbourne waste disposal market. This has tripled the waste disposed at the centre and increased its financial performance.

Closing or restricting the operating hours of the Centre on weekends and public holidays, when revenue does not cover operating costs, while significantly improving the financial performance of the Centre would significantly reduce the service to the community and is not being considered.

As at mid-2018 additional planning and business development is needed to achieve cost neutral or profitable financial performance and to provide additional recovery options, for example to support product stewardship initiatives and the Victorian's government's e-waste to landfill ban planned to commence on 1 July 2019.

Operations

Despite past upgrades the site is still constrained due to the size of the transfer station elevated deck. The deck area is a multi-use zone that incorporates:

- customer transactions
- general waste disposal bays
- garden organics disposal bay
- cardboard chute
- separate drop-off areas for e-waste, waste oil, gas cylinders, paint, batteries, fluorescent tubes and metals.

Given the size constraints of the elevated deck, Council has maximised functionality, however expansion of the deck to improve operational efficiency and increase resource recovery opportunities is needed in the foreseeable future.

Planning legislation

Changes to land use controls require a transfer station and materials recycling facility to apply for a planning permit in industrial areas, some business zones and the Township Zone. The Mixed Use Zone prohibits these facilities to safeguard the amenity of residential areas. Conditions can include hours of operation, traffic management, buffers and setbacks and noise limits.

The new planning provisions do not apply to existing lawful operators. However, any changes to an existing facility, such as the Banyule Waste Recovery Centre, will be subject to the new provisions. These changes need to be considered in the development of a master plan for the facility.

Resale shop

The Waste Recovery Centre does not have a resale shop or a drop-off point for items that are reusable and could be sold.

In 2017 Council trialled a drop-off point for reusable items at the Waste Recovery Centre. Materials were recovered but the limited space on the elevated deck was challenging and slowed vehicles moving through the facility.

There was strong support for Council to establish a resale shop from the Community Reference Group and in the community survey.

Issue	Opportunity
The financial cost of running the Waste Recovery Centre exceeds the revenue collected	Continue to improve the financial position of the Waste Recovery Centre whilst ensuring convenient hours operating hours to the community
Space constraints make it difficult to expand the current services at the Waste Recovery Centre or expand the type of materials collected	Develop a master plan for the Waste Recovery Centre to maximise the recovery of recyclable materials
Planning constraints may impede any changes to the Waste Recovery Centre	Investigate the planning issues as part of the master plan development
Operating costs for the Waste Recovery Centre on weekends and public holidays is greater than revenue received.	Manage operating costs without reducing service provision to the community.

3 Consultation

3.1 Community Reference Group

Council recognises that engaging with the community by providing information to and consulting with individuals and organisations ensures a more collaborative decision-making process that results in increased community support. Council established a Community Reference Group made up of a broad range of residents from the municipality to help develop the Plan.

The purpose of the group was to:

- > represent the views of the community and provide suggested new ideas specific to the Strategy
- > be ambassadors for and monitor and review the implementation of the community engagement for the plan development.
- > provide strategic input to assist Council in developing the Waste Management Plan.

Council called for expressions of interest for members. Residents submitted an application detailing their interest, expertise and other experience which was assessed against:

- > a balanced representation from each Council ward
- > a mix of skills and interests
- > a member of the Banyule Environment Advisory Committee
- > a business person.

The group comprised 12 individuals, the Mayor and three other councillors, two waste management staff and the project sponsor, the Director of Assets and City Services.

The members were instrumental in developing the Plan. They brought a wealth of experience to the six meetings that were held over six months. They also consulted with and accessed their networks and groups to broaden their representation.

The draft plan was presented to the last meeting for comment and changes before it was submitted to Council for approval to be released for public exhibition.

Council gratefully acknowledges the commitment, time, expertise and thoughtful consideration the community members brought to the development of the plan that was enriched due to their involvement.

3.2 Community survey

Council sent a survey and a letter from the Mayor to 2,500 randomly selected households inviting them to complete the survey. It was promoted through a variety of ways including:

- > Council's Facebook several times
- > Council's Shaping Banyule webpage where Council engages with the community to have their say
- > the Mayor's column in the local paper
- > handing out info cards at the Waste Recovery Centre
- > handing out info cards at the Banyule Festival
- > the Community Reference Group promoting it through each of their networks.

Council received 842 responses with 59% from the letters to households. The next biggest group of respondents found out about the survey through various Facebook pages.

Key findings of the survey include:

- > satisfaction with collection services:
 - 82% of the total sample were satisfied or very satisfied with the overall kerbside collection service and the individual collections – 86% for garbage, 85% for recyclables and 80% for garden organics

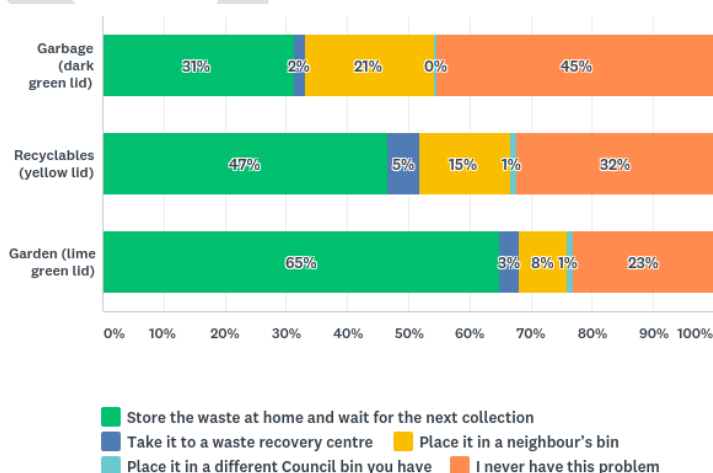
- 79% had used the hard waste or bundled branches service and 84% of them were satisfied or very satisfied
- > food organics
 - one in three people used some sort of home composting system to manage food waste
 - seven out of 10 people preferred to include food into the garden organics collection to keep their food waste out of landfill, *if the cost was approximately the same*
 - the sample was evenly divided on managing food waste at home using a bio-digester and putting it in with the garden organics to be recycled
- > Waste Recovery Centre
 - 59% of people used the centre to drop off non-recyclable materials
 - 74% took a car boot load and 25% a trailer load of materials
 - there was very strong support that it was important for Council to provide the range of disposal services at the centre, however many have not used the service and a reasonable amount could not see themselves needing the service in the future.
- > recycling at community events
 - the majority of respondents strongly supported Council recycling at community events including plastic, glass and aluminium (95%), cutlery and crockery (83%) and uneaten food (74%)
- > Council website pages
 - about one in two people (51%) had visited the website in the total sample
 - 73% were very satisfied (19%) or satisfied (54%) with the information on the website
- > actions Council could take
 - 28% thought Council could provide more education, feedback on performance and incentives to encourage the community to minimise waste and/or recycle more
 - there was support for Council to advocate on issues such as plastics, e-waste, reducing waste to landfill and products with recycled materials.

One of the interesting findings was what people did when they had more waste than would fit in their bin as the behaviour differed for each bin. Figure 11 shows the responses for each household bin.

Around two-thirds of households stored garden organics until the next collection (65%) compared to the garbage bin, when the largest proportion of households placed the excess in their neighbour's bins (21%). This might be due to the smell of storing garbage. Many people commented that they asked their neighbour's permission.

It is also interesting to note the differences in those that never experienced that problem for each bin, which was nearly half (45%) for the garbage bin, around one third (32%) for the recyclables bin and about one in five (23%) for the garden organics bin.

Figure 11 What people do when they have more material than fits into the bin



Only one in five people were aware that the Victorian Government intended to ban e-waste being deposited in landfill. (A commencement date of 1 July 2019 was announced after the survey.)

See Appendix C for the full Community Survey Summary Report.

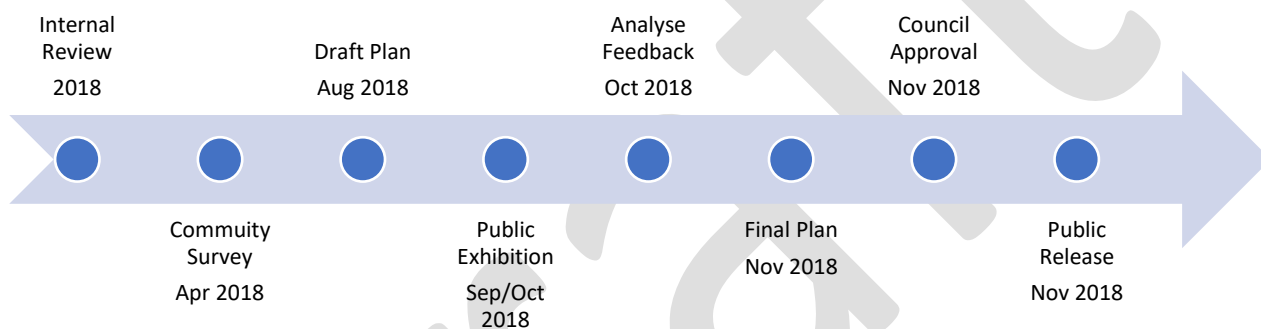
3.3 Further community input into the draft

In addition to consultation with the Community Reference Group Council staff invited each person who submitted an expression of interest to participate as a member of the Community Reference Group with an opportunity to meet with Council staff to ask questions, put forward their comments and ideas on Council's existing waste management services and future waste management strategy for Banyule.

3.4 Consultation on the draft plan

Figure 12 shows the timeline for the consultation, or public exhibition, of the draft plan. The feedback will be analysed and incorporated as appropriate before the final plan goes to Council for approval.

Figure 12 Consultation on the draft plan



4 Zero waste action plan

The Zero Waste Plan is a 10-year plan and includes a four-year action plan to address the identified issues and opportunities.

Successful implementation of the strategic directions and proposed action plan will result in the largest increase in the diversion of waste from landfill since 2005. This is within the capability of Council to achieve within the four year action plan period.

If the four year action plan is implemented in full any significant increase in diversion from landfill from the kerbside collection service thereafter will require considerable support and action from state and federal governments, new reprocessing technology, and increasing the size of recycling and recovery industries in Australia.

To achieve zero waste to landfill by 2030 will require the amount of kerbside waste sent to landfill to halve every four years to 2030. A goal of zero waste to landfill by 2030 is an aspirational objective that can only be achieved by Council through advocacy.

The main focus for the action plan is on activities within Council's control. This avoids allocating disproportionate time on areas outside of our control and that might be dealt with differently. For example, advocating to the state or federal government on particular issues is important and there are a number of issues identified, but it is outside of Council's control to effect change.

4.1 Structure of the plan

The actions are organised under the four strategic directions of the Zero Waste Plan which are to:

1. Avoid waste generation.
2. Build, support and strengthen a community culture that is striving to be zero waste.
3. Deliver environmentally responsible and cost-effective recycling and waste services.
4. Advocate to other levels of government to avoid waste, reduce waste to landfill and increase recycling.

Council acknowledges that it can influence, but not control, achieving Strategic Direction 1, avoiding waste generation, and Strategic Direction 2, supporting the community to achieve zero waste. Council has direct control of Strategic Direction 3, which involves its major activities and costs, and the majority of the Action Plan is focused in this area to ensure maximum results for Council's resources and effort.

The delivery of actions is prioritised into:

- > short term (1 year)
- > medium term (2-3 years)
- > long term (4 and more years).

The actions have been prioritised for the fastest possible achievements and considered:

- > achieving maximum impact as quickly as possible
- > achieving the easiest actions with large impacts first, known as 'low hanging fruit'
- > providing a pathway to achieve zero waste
- > level of effort and impact of outcomes
- > what is within Council's control and what is outside its control but it can influence.

Prioritisation has also has been influenced by:

- > work already underway
- > feasibility of implementation
- > whether funding is currently available or must be applied for either internally or externally
- > the ability to deliver the best possible community benefits using Council resources.

These actions involve the development of more detailed internal strategies and work plans to strengthen Council's capacity to deliver the benefits of the plan.

4.2 Monitoring and review

The plan will be reviewed annually to measure progress against the directions, actions and waste sent to landfill against the target to achieve zero waste. This will be reported to the community.

Criteria to be reported on will include:

- total kerbside garbage to landfill (tonnes)
- total kerbside greenhouse gas emissions to landfill(%)⁵
- total kerbside diversion from landfill (%)
- total kerbside organics diversion from landfill
- total kerbside recyclables (tonnes)
- total kerbside waste (kilograms per collection household)

In addition to annual reviews random bin audits will be undertaken from time to time by Council to obtain a snapshot of bin contents. Random bin audits reveal changes in bin composition (for example over the last 10 years there has been a decrease in newsprint, whilst an increase in electronic waste).

Bin audits must be undertaken prior to and following changes to a kerbside collection service.

The four-year action plan will be reviewed in 2022 to assess achievements and develop a new four-year plan that will include community feedback.

The review will include an assessment of any new technologies or issues that need to be incorporated into the action plan to progress achieving the direction and targets.

⁵ This criteria may be subject to greenhouse gas capture and diversion at the landfill.

4.3 The Action Plan

Vision: Banyule is a community motivated to achieve zero waste by 2030.

Key

Lead	Priority	Cost	Budget
MO Manager Operations	1 Year	\$ 0-\$10,000	E Existing
RCC Rethink Centre Coordinator	2-3 Years	\$\$ >\$10,000-\$100,000	
WEC Waste Education Coordinator	4 & + Years	\$\$\$ >\$100,000	R Additional Funding Required
WMC Waste Management Coordinator			
MP Manager Parks and Open Space			

Strategic direction 1: Avoid waste generation							
Action	Measure	Lead	Priority			Cost	Budget
			1	2-3	4 & +		
Promote food waste avoidance to the community, through programs such as Love Food Hate Waste, to reduce avoidable food waste	Reduction in avoidable food waste compared to previous bin audit	WEC	X			\$	E
Develop a program to work with parents-to-be to avoid waste in their parenting through promoting reusable nappies, reusable toys, powdered formula avoidance, and how to help their family and friends to avoid waste in gifts	Program developed and delivered	WEC		X		\$\$	R
Develop and deliver community programs to avoid waste and reuse and repair items as much as possible	Program developed and delivered	WEC	X	X	X	\$	E
Provide new and retrofit existing public water drinking fountains to enable bottle filling to discourage the purchase of single use plastic water bottles.	Program developed and delivered	MP		X		\$	R

Strategic direction 2: Build, support and strengthen a community culture that is striving to achieve zero waste							
Action	Measure	Lead	Priority			Cost	Budget
			1	2-3	4 & +		
Secure Council funding to develop and deliver a series of priority education and community engagement programs based on the waste hierarchy for Council to deliver across the four-year action plan	Funding secured Programs developed Programs delivered	WEC RCC	X	X	X	\$	E
Deliver waste avoidance, reuse and correct recycling education through Council's Rethink Centre and community education programs	Programs delivered	RCC WEC	X	X	X	\$\$	E
Undertake a business case to determine the viability to support households to manage food scraps and garden organics with subsidised home composting and/or bio-digesters	Business case completed Recommendations implemented	WMC		X		\$	E
Assist businesses and organisations to avoid and reduce waste by providing advice on how to reduce waste production, make your waste recoverable through existing recycling systems, or by facilitating connections between businesses, organisations, and households that allow one businesses or organisations waste to be another's useful resource	Funding secured Programs developed Programs delivered	WEC		X		\$\$	R
Strategic direction 3: Deliver environmentally responsible and cost-effective recycling and waste services							
Action	Measure	Lead	Priority			Cost	Budget
			1	2-3	4 & +		
Undertake a feasibility study to assess the viability of providing residents with additional recycling options, such as mobile periodical or fixed drop-off points, to achieve greater geographical access across the municipality	Feasibility study completed Recommendations implemented	WMC		X		\$	R
Complete the business case for the introduction of a food organics and garden organics (FOGO) kerbside collection service	Business case completed Recommendations implemented	MO	X			\$	E
Undertake a feasibility study based on at least a cost-neutral business model to redevelop the Waste Recovery Centre, including establishing a resale shop or drop-off points for reusable items	Feasibility study completed Recommendations implemented	MO	X			\$\$	E
Investigate expanding the hard waste collection to include e-waste to meet the e-waste landfill ban	Investigation completed Recommendations implemented	WMC		X		\$\$	R

Action	Measure	Lead	Priority			Cost	Budget
			1	2-3	4 & +		
Undertake a business case to assess the viability of increasing the size and type of materials accepted in the hard waste and bundled branches collections	Business case completed Recommendations implemented	WMC		X		\$	E
Investigate a separate waste services charge and compare against the current waste services paid within rates	Investigation completed Recommendations implemented	MO	X			\$	E
Develop a policy for charity and not-for profit assistance with waste management collection and disposal (above the standard service)	Policy developed and implemented	WMC		X		\$\$	R
Investigate strengthening Council's planning scheme for multi-unit developments to make a three-stream collection mandatory (and practical)	Investigation completed Recommendations implemented	MO			X	\$\$	R
Undertake a business case to assess the viability of Council providing waste and recycling collections to multi-unit developments and properties that are currently ineligible for the service	Business case completed Recommendations implemented	WMC		X		\$	E
Undertake a business case to assess the viability of public place recycling	Business case completed Recommendations implemented	WMC		X		\$	E
Reduce Council's waste generation at Watermarc and 1 Flintoff Street	Waste reduction reported	MO	X			\$	E
Continue providing waste management systems and vendor requirements at Council's major community events that reduce waste to landfill and increase recovery, including food	Waste management system provided at events	WMC	X	X	X	\$	E
Update Council's Sustainable Procurement Framework for the Procurement Policy guidance to embed the 5Rs – refuse, reduce, reuse, repurpose and recycle as core values in all future contracts and procurement policy: > ensure, where possible, that products purchased can be recycled at end of life	Procurement policy updated and adopted	MO		X		\$	R
Continue to participate with the Metropolitan Waste and Resource Recovery Group to investigate alternate waste technologies	Review outcomes Recommend appropriate actions to Council	MO WMC	X	X	X	\$	E

Action	Measure	Lead	Priority			Cost	Budget
			1	2-3	4 & +		
Refresh and expand Council's educational programs and website pages to promote Council's activities and performance	Education programs updated Website updated Council performance reported annually Monitoring system implemented	WEC RCC		X		\$	E
Increase Waste Education Service participation at major Banyule festivals and events	Waste education activities increased.	WMC	X			\$	E
Strategic direction 4: Advocate to other levels of government to avoid waste, reduce waste to landfill and increase recycling							
Action	Measure	Lead	Priority			Cost	Budget
			1	2-3	4 & +		
Advocate to the federal government, state government and industry to adopt product stewardship approaches for these priority items: > single-use plastics > expanded polystyrene > disposable nappies > mattresses / mattress bases.	Engage in the product stewardship consultation process.	MO	X	X	X	\$	E
Advocate to the federal government to speed up a product stewardship scheme for these products: > microbeads (on Product Stewardship priority list) > e-waste (to support the Victorian Government landfill ban which is not fully funded to collect and process items)	Engage in the product stewardship consultation process.	MO	X	X	X	\$	E
Advocate to the federal government and industry to ban or find alternatives to products made up of multiple materials that are difficult to separate for recycling, such as: > plastic composites (e.g. chip packets, drink bottles with moulded plastic labels) > carpet / flooring underlay > curtain backing (heat fabric).	Engage in the product stewardship consultation process.	MO	X	X	X	\$	E
Advocate to the federal government and industry for a recycling and reprocessing product stewardship scheme for disposable nappies, including a collection service from households	Engage in the product stewardship consultation process.	MO	X	X	X	\$	E

Action	Measure	Lead	Priority			Cost	Budget
			1	2-3	4 & +		
Advocate to the state government for hospitals to discontinue the practice of distributing free disposable nappy samples and disposable nappy marketing materials to new parents	Engage with the State Government, Victorian Department of Health and Banyule public hospitals.	MO	X	X	X	\$	E
Advocate to the state government for amendments to the Victorian Planning Provisions for mandatory waste stream separation (garbage, recyclables, food and garden organics, hard waste) and collections in multi-unit developments	Engage through the planning scheme consultation process and Sustainability Victoria.	MO	X	X	X	\$	E
Advocate to the state government for increased reinvestment of the Victorian landfill levy to drive waste reduction and increased recycling by: > improving collection and sorting infrastructure including resource recovery centres > supporting councils to work with their communities to avoid waste, reduce contamination and increase recovery of food organics > developing and delivering community engagement programs to reduce waste to landfill and increase recovery > driving market development to improve competition, closed loop purchasing and increased jobs.	through MAV through MWRRG through local member	MO	X	X	X	\$	E
Advocate to the state and federal governments to introduce a consumer rating system for recyclable packaging.	Engage in the consultation process following the 26 April 2018 COAG Environment Ministers announcement on recyclable packaging by 2025.	MO		X		\$	E

References

Council Plan 2017-2021, Banyule City Council, 2017

Proposed Council Plan 2017-2021 (Year 2), Banyule City Council, 2018

Environment Protection Act 1970, Victoria

Metropolitan Waste and Resource Recovery Implementation Plan, Metropolitan Waste and Resource Recovery Group, 2015

Statewide Waste and Resource Recovery Infrastructure Plan, Sustainability Victoria, 2018

Terms and definitions

The following terms and definitions are those provided by Sustainability Victoria in 2017 for the regional waste and resource recovery implementation plans.

Term	Explanation
Anaerobic digestion (AD)	Biological breakdown by microorganisms of organic matter, in the absence of oxygen, into biogas (a mixture of carbon dioxide and methane) and digestate (a nutrient-rich residue).
Collection system	System for collecting materials from the kerbside, including bin type and collection frequency.
Contamination	Contamination occurs when items that do not belong in a particular bin are placed in that bin e.g. materials placed in the recyclables bin, such as plastic bags, food and soft plastics, that are not accepted by the sorter.
Commercial and industrial (C&I) waste	Solid inert waste generated from trade, commercial and industrial activities including the government sector. It includes waste from offices, manufacturing, factories, schools, universities, state and government operations and small to medium enterprises e.g. food waste.
Commingled recyclables	Materials combined generally for the purposes of collection, mainly through municipal collection services. Includes plastic bottles, other plastics, paper, glass and metal containers. Commingled recyclable materials require sorting after collection before they can be reprocessed. Can also be called commingled materials.
Composting	The process whereby organic materials are microbiologically transformed under controlled aerobic conditions to create a pasteurised and stabilised organic product for application to land.
Construction and demolition (C&D) waste	Solid inert waste generated from residential and commercial construction and demolition activities e.g. bricks and concrete.
Diversion rate	The diversion rate is calculated by dividing the tonnes of recyclables and garden organics recycled, by the tonnes of recyclables, garden organics and garbage collected from the kerbside system (i.e. excludes Waste Recovery Centre and other drop-off facilities).
Drop-off centre/site	A facility where households can drop off selected materials and household items for recycling and reuse.
E-waste	E-waste comprises of electronic equipment with a plug or battery that requires a current to operate and that has reached end of life. It includes televisions, computers, monitors and whitegoods such as fridges and washing machines.
Energy from waste	The terms 'energy recovery from waste', 'waste to energy' or 'energy from waste' can be used interchangeably to describe a number of treatment processes and technologies used to generate a usable form of energy from waste materials. Examples of usable forms of energy include electricity, heat and transport fuels.
Environment Protection Authority Victoria (EPA)	Established under the auspices of the <i>Environment Protection Act 1970</i> , EPA's role is to be an effective environmental regulator and an influential authority on environmental impacts.

Term	Explanation
Food organics	Food waste from households or industry, including food processing waste, out-of-date or off-specification food, meat, fruit and vegetable scraps. Excludes liquid wastes.
Garbage	
Garden organics	Organics derived from garden sources e.g. grass clippings, tree prunings. Also known as green organics.
Greenhouse gases	Gases, including carbon dioxide and methane that trap heat in the earth's atmosphere, affecting weather and climate patterns.
Hard waste	The term applied to household garbage that is not usually accepted in kerbside garbage bins by councils e.g. old fridges and mattresses.
Illegal dumping	Illegal dumping is the deliberate and unauthorised dumping, tipping or burying of waste on land that is not licensed or fit to accept that waste.
Kerbside waste/collection	Waste collected by councils from residential properties, including garbage, commingled recyclables and garden organics, but excluding hard waste.
Landfill	Discharge or deposit of solid wastes onto land that cannot be practically removed from the waste stream.
Landfill levy	A levy applied at differential rates to municipal, industrial and prescribed wastes disposed of at licensed landfills in Victoria. Landfill levies are used solely for the purposes of environment protection and fostering environmentally sustainable use of resources and best practice in waste management. They fund the activities of WRRGs, SV and EPA, helping to establish waste management infrastructure, industry waste reduction programs, education programs, regulatory controls and enforcement regimes. Levies also provide an incentive to minimise the generation of waste, sending a signal to industry that the government supports efforts to develop alternatives to disposal to landfill.
Litter	Any small, medium or large item placed inappropriately.
Materials recovery facility (MRF)	A centre for the receipt, sorting and transfer of materials recovered from the waste stream prior to transport to another facility for recovery and management. At a MRF materials may undergo mechanical treatment for sorting by characteristics such as weight, size, magnetism and optical density and may include cleaning and compression. Materials may be received as mixed streams such as commingled recyclables from households and businesses or single streams such as metals.
Municipal solid waste (MSW)	Solid waste generated from municipal and residential activities, and including waste collected by, or on behalf of, a municipal council. In this document, MSW does not refer to waste delivered to municipal disposal sites by commercial operators or waste from municipal demolition projects.
Processing facilities	Facilities which either receive materials directly from collection systems or from recovery facilities for further sorting and/or processing to provide material for use in the generation of new products.
Product stewardship	A concept of shared responsibility by all sectors involved in the manufacture, distribution, use and disposal of products, which seeks to ensure value is recovered from products at the end of life.
Public place recycling	Recycling facilities found in public areas, such as parks, reserves, transport hubs, shopping centres and sport and entertainment venues that allow the community to recycle when away from home.
Putrescible waste	Waste that readily decomposes, including food waste and organic waste from gardens.
Recover / recovery / resource recovery	The process of recovering resources from waste for reuse or reprocessing. This includes collection, sorting and aggregation of materials.
Recycle / recyclables / recycling	To convert waste into a reusable material. In common practice the term is used to cover a wide range of activities, including collection, sorting, reprocessing and reuse.
Reprocess / reprocessing	To put a material that has been used through an industrial process to change it so that it can be used again.

Term	Explanation
Reprocessor / reprocessing facility / reprocessing infrastructure	Facility that uses an industrial process to change the physical structure and properties of a waste material so it can be used again. This can include facilities that dismantle products, such as tyres, e-waste and mattresses, and energy from waste facilities that use materials to generate energy.
Resale centre / shop	A centre/shop that enables the sale and subsequent reuse of good quality, saleable products and materials that were disposed of by their previous owner.
Residual waste	Residual material that remains after any source separation or reprocessing activities of recyclable materials or garden organics. Waste that is left over after suitable materials have been recovered for reuse and recycling. This generally means the environmental or economic costs of further separating and cleaning the waste are greater than any potential benefit of doing so.
Resource recovery	Resource recovery is where items are collected for recycling to avoid waste going to landfill. Items recovered range from those collected through kerbside recycling (e.g. glass bottles) to scrap steel, tyres and motor oil.
Resource recovery infrastructure	Facility that receives and manages materials to enable them to be reused or reprocessed. This includes drop off points, resale centres, resource recovery centres, Transfer Stations and Materials Recovery Facilities.
Reuse	Recovering value from a discarded resource without processing or remanufacture e.g. garments sold through opportunity shops are, strictly speaking, a form of reuse, rather than recycling.
Solid waste	Non-hazardous, non-prescribed, solid waste materials, ranging from municipal garbage to industrial waste.
Source separation	The practice of segregating materials into discrete material streams prior to collection by, or delivery to, processing facilities.
Total waste generation	The total tonnes of garbage, recyclables and garden organics collected from household kerbside collections.
Waste	Any discarded, rejected, unwanted, surplus or abandoned matter, including where intended for recycling, reprocessing, recovery, purification or sale. Anything that is no longer valued by its owner for use or sale and which is, or will be, discarded. In this document, the term 'solid waste' refers to non-hazardous, non-prescribed, solid waste materials ranging from municipal garbage to industrial waste.
Waste and resource recovery group (WRRG)	Statutory authorities established under the <i>Environment Protection Act 1970</i> responsible for preparing the regional waste and resource recovery implementation plan for their region.
Waste and Resource Recovery Planning Framework	The planning framework as defined in the 2014 amendments to the <i>Environment Protection Act 1970</i> and including: <ul style="list-style-type: none"> • The <i>Statewide Waste and Resource Recovery Infrastructure Plan</i> (state infrastructure plan). • The seven regional waste and resource recovery implementation plans (regional implementation plans). • Relevant Ministerial Guidelines made under section 50CA of the EP Act. • The process for integration of the state infrastructure plan and regional implementation plans.
Waste management industry	Applies to those involved in managing waste e.g. collectors, sorters, processors and landfill operators.
Waste minimisation	The concept of, and strategies for, waste generation to be kept to a minimum level in order to reduce the requirement for waste collection, handling and disposal to landfill. Also referred to as waste avoidance.
Waste to energy	Refer to Energy from waste.

Appendix A Council Plan 2017-2021 (Year 2)

Details from Year 2 of the Council Plan 2017-2021 related to the Zero Waste Plan and that have been incorporated into the Plan and Action Plan.

2.4 Avoid waste generation

We will:

- 2.4.1 Discourage waste to landfill, including leading by example in reducing Council's own waste generation
 - 2.4.2 Identify, promote and implement viable recycling opportunities
 - 2.4.3 Advocate for increased use of environmentally beneficial technologies and services in the community and government.
- > Complete the development of a new Waste Management Plan with a view to move towards zero waste.
 - > Develop business cases for:
 - The introduction of a food organics/ green organics service.
 - The introduction of public place recycling.
 - Improvements at the Waste Transfer Station to increase the recycling offer.
 - > Continue to deliver Council's current best practice waste management services.
 - > Implement improvement plans for waste related services, including:
 - Introduction of technology to continue to improve service efficiency
 - Kerbside collection services
 - Waste Recovery Centre
 - Dumped Rubbish and Litter Strategic Plan.
 - > Continue to manage Council's significant recycling services, seeking further opportunities for diversion from the waste stream.
 - > Continue to implement waste avoidance and resource recovery programs to residents, schools and community groups.
 - > Increase Waste Education Service participation at major Banyule festivals and events.
 - > Promote 'onsite at-source' green and food waste avoidance solutions to the community, including: worm farms and compost bins.

Indicator 14: Local Government Performance Reporting Framework – Waste Collection:
(d) Waste diversion (amount of waste diverted from landfill is maximised)

Appendix B Education and behaviour change activities

Council's existing direct waste avoidance and recycling education services

Program name	Program outcome	Annual target delivery	Number of participants per session	Benchmark for success
Schools	Provide specialist advice to schools to reduce and avoid waste at school (and at home) using Council's Waste Education Van and other resources			
	<ul style="list-style-type: none"> > Conduct bin audits to identify opportunities to reduce waste and increase recycling > Council's trained ResourceSmart Schools facilitator to work with the schools to complete the ResourceSmart modules 	5	Whole school or classes that have waste added to the curriculum	5 schools engaged
Community	Provide specialist advice to avoid food waste using the food waste diary and manage food waste at home with composting or green cones	1	1 school	1 school engaged
	Coordinate waste avoidance workshop at local venues to assist residents to better manage waste and also avoid waste	2	60 - 100 attendees	Completed 2 workshops
	Decluttering workshops	6	40 attendees	Completed 6 times
	Waste information	4-5	Large audience	Completed 4-5 times
	Festivals	2	Large audience	Completed 2 displays/activities
	Council newsletters/ local media stories	4	Large audience	4 articles
	Composting seminar with gardening expert	2	60 - 100 attendees	1 workshops

Community groups/sporting	Deliver information on litter and establish relationships with sporting clubs to promote less rubbish on the ground	2	Large audience	3 clubs contacted
Litter education	Deliver actions from the Dumped Rubbish and Litter Plan 2017-2021	2018 to 2021	Large Audience	Actions completed
Environmental Waste Services	Support the Environmental Waste Service and assess special needs	All year	300+	Actions completed

Rethink Centre

Current or Proposed	Program name	Program outcome	Target audience	Annual delivery target	Benchmark for success
Current	Litter Sisters Do Lunch	An understanding of the nutritional and waste avoidance benefits of nude food	Banyule pre-schoolers	20+	Positive teacher evaluation & return bookings
	Recycle it Right	An improved understanding of waste avoidance practice and commercial scale resource recovery	Primary school students from Banyule and other councils	40+	Positive teacher evaluation & return bookings
	Living in a Material World	An improved understanding of waste avoidance practice, commercial scale resource recovery and landfill management.	Adult residents from Banyule and other councils	10	Positive teacher evaluation & return bookings
	Living in a Material World	An improved understanding of material properties and commercial scale resource recovery	Secondary students from Banyule and other schools	4	Positive teacher evaluation & return bookings
	Rethink Performer Hire	Improved understanding and use of festival waste management systems and reduction in cross contamination between waste streams	Festival attendees at Banyule's and other councils' festivals	8	Positive teacher evaluation & return bookings
Proposed	Lota Less Litter Show	An understanding of litter prevention action. In particular as it relates to soft plastics and freshwater and marine environments	Lower primary students from Banyule and other schools	As required	Positive teacher evaluation & return bookings
	Decay – Soil Microbes and Nutrient Recycling	An understanding of the role soil microbes play in organics reprocessing and the promotion of domestic scale food waste reprocessing technology.	Secondary students from Banyule and other schools	As required	Positive teacher evaluation & return bookings

Council supports ResourceSmart Schools

ResourceSmart Schools is an award-winning Victorian Government program, managed by Sustainability Victoria that assists schools to embed sustainability in everything they do. It provides practical support to reduce resource use, make cost savings, integrate sustainability into the curriculum and share learnings beyond the school gate. This means it schools helps schools reduce costs while giving students the opportunity to learn about sustainability in a tangible and realistic environment.

It rewards and recognises students, teachers, and schools for sustainability achievements through Sustainability Certification and the Annual ResourceSmart School Awards.

Council's waste educator is a trained ResourceSmart Schools facilitator and works with the schools to complete the modules.

Council supports ResourceSmart Schools in the municipality and encourages non-participating schools to become involved. Currently:

- > 33, or 61%, of the total 54 schools in Banyule participate in ResourceSmart Schools.
- > This is made up of 26 primary and 7 secondary schools.

Education actions to support the action plan

The following actions are more detailed and support the higher-level actions of the Action Plan.

Strategic direction 2: Build a community culture that is striving to be zero waste

- > Work with maternal health to support parents to make an informed choice between disposable nappies, reusable nappies or a combination of the two
- > Work with Banyule sporting clubs, charities, and volunteer organisations to implement purchasing practices, such as for food and drinks, that minimise waste and maximise resource recovery
- > Promote recycling services for non-kerbside and non-Waste Recovery Centre accepted items
- > Develop targeted education and compliance programs using improved infrastructure technology
- > Promote that Christmas trees can be collected (whole) as part of the bundled branches collection
- > Actively promote bin size options and charges to residents
- > If a food organics and garden organics collection service is adopted: Develop and implement a community education program
- > Educate food vendors on food service packaging requirements that can be accepted at Council events and in household food organics and garden organics bins (Council events and take away outlets)

Appendix C Waste Management Community Survey Summary Report

In March and April 2018, Council conducted a community survey to find out what people knew about waste and recycling and to ask about their ideas for a new 10-year waste and recycling plan.

Council sent a letter from the Mayor and the survey to a random sample of 2500 residents and 494, or nearly 20%, completed the survey.

An additional 348 people found out about the survey through other sources. This included Council promoting the survey through its Facebook page, the Shaping Banyule webpage and direct contact with the community. Members of the Community Reference Group, a group of interested residents who worked with Council over six months to develop the draft plan, used their networks to promote the survey.

In total, 842 surveys were completed.

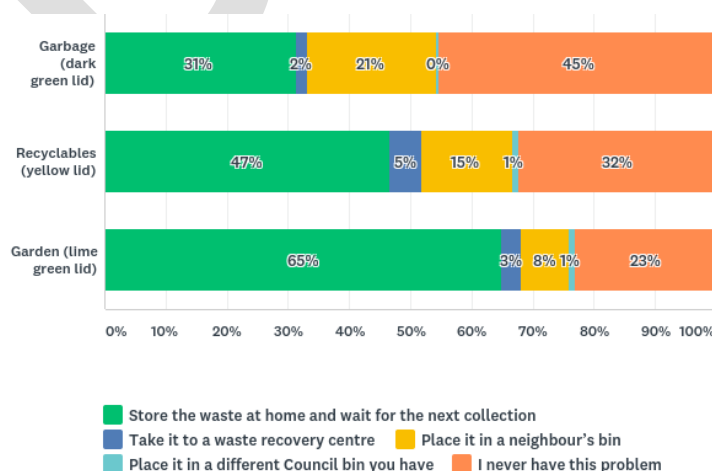
Dwellings

- > The majority (82%) of people either owned or were purchasing their own homes and about one in five (18%) were renting.
- > Nearly 3 out of 4 respondents lived in a free-standing home.
- > About 1 in 10 lived in a townhouse, duplex or a unit that was not part of an apartment building.
- > 1 in 20 lived in an apartment building.

Bins

Council's standard bin service includes an 80 litre garbage bin, a 240 litre recyclables bin and a 120 litre garden organics bin.

- > One in four people paid extra for a bigger (240 litre) garden organics bin.
- > Behaviours differed for each of the three different bins when the bin was full:
 - For the garbage bin:
 - nearly half did not ever have that problem
 - if they did, one in five put it in a neighbour's bin (unclear if they asked permission)
 - nearly one in three stored the material until next time.
 - For the recyclables bin:
 - one in three did not ever have that problem
 - if they did, 15% put it in a neighbour's bin (unclear if they asked permission)
 - nearly half stored the material until next time.
 - For the garden organics bin:
 - one in four people did not ever have that problem
 - nearly two-thirds stored the waste at home to wait for the next collection
 - only 8% said they put it in a neighbour's bin.



Satisfaction with Council's waste collection service

- > 82% of the total sample were satisfied (47%) or very satisfied (35%) with the overall three-bin kerbside collection service.
- > When asked about the three different services, there were high levels of satisfaction with each one (garbage 86%, recyclables 85%, garden 80% respectively).
- > 364 people provided suggestions to improve the waste collection service that were grouped into 26 categories.
- > The top three categories were:
 - 20% of people commented on the bin size and most of these were about having a larger garden bin given the size of blocks.
 - 16% of comments raised concerns about bin emptying such as spilled contents that were not cleaned up by staff, bins being left all over the road in a state of disarray and bins not being collected.
 - 11% wanted food organics included in the garden collection.

Hard waste and bundled branches booked collection service

- > Four out of five people had used the hard waste and/or bundled branches booked collection service.
- > 84% of people that had used the service were satisfied (40%) or very satisfied (44%).
- > 168 people provided suggestions for improvements to the service.
- > The top three categories were:
 - 20% were not happy with the size restrictions for hard waste and bundled branches, the rules about what can be accepted and how it had to be presented.
 - 13% wanted more than two collections a year.
 - 11% of comments were about bundled branches.

Garden and food organics

- > Three out of four people (74%) put their garden waste into the garden organics bin.
- > Nearly two out of three people (59%) put all of their food waste into the garbage bin.
- > Half composted garden organics at home.
- > One out of three people used some sort of home composting system to manage food waste.
- > If it was made available and *if the cost was approximately the same*, seven out of 10 people would put their food scraps into the garden organics bin, to keep their food waste out of landfill.

Waste Recovery Centre

- > One out of three people had visited the Waste Recovery Centre in the last 12 months.
- > One out of three people had never visited the Waste Recovery Centre.
- > Of those that visited, nearly two out of three took non-recyclable materials.
- > People can dispose of a wide range of materials at the Waste Recovery Centre – some for free and some for a fee. The majority of people thought it was important for Council to provide these options but far less had used, or would use, the specific services.

Waste and recycling services pages on the Council website

- > About one in two people (51%) had visited the website.
- > Of those, 73% were satisfied with the information on the website.

Local actions Council could take

- > 539 people took the time to provide suggestions for local actions Council could take. These were categorised into 22 separate categories plus a miscellaneous category.
- > Nearly one out of three people suggested additional education, feedback on services and how households were doing and incentives to do the right thing.
- > About one out of 10 people wanted more infrastructure and services and; charges, rates and incentives.