Maribyrnong
CITY COUNCIL

Towards Zero Waste Strategy 2019 to 2030

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1 Executive Summary

Council aspires to become a resource smart city that moves away from the paradigm of a 'take, make, waste' society, and instead advocates and supports a system of 'make, use, return'.

We need to rethink our use of resources and consider the whole life cycle of materials, adopting a circular economy approach to maintain the value of these resources for as long as possible.

In previous strategies, Council focused on essential improvements in waste and recycling. It is now time to set more ambitious targets and become leaders in resource management and recovery.

This strategy examines the achievements of Council in the past decade and outlines the key opportunities and actions to achieve greater resource recovery in the coming years.

Over the past 15 years, Council has made significant headway in the waste and resource recovery space. These achievements include a 59% reduction in recycling contamination, a 6% increase in the recycling rate, as well as a 20% reduction in the overall amount of waste we create, despite a growing population.

While these achievements should be celebrated, there is much still to be done. As a City, our diversion rate is still lower than the metropolitan average, and Council does not collect as much organic waste using the kerbside bins as the average Council in Victoria.

Furthermore, as a City, our patterns of consumption and the volume of waste we produce are both highly influenced by social and climatic effects, such as the drought, and periods of economic downturn.

Council has made significant progress in the past 15 years, however with recent changes in the recycling and waste processing industry, and new technologies available, there is much opportunity to improve and reduce our waste as a municipality.

In line with Waste Management Policy 2019, Council have established aspirational targets to achieve a waste diversion rate of 60% by 2030 and move toward zero waste to landfill by 2050.

To achieve these goals, this strategy identifies seven key waste streams which present the greatest potential in terms of waste diversion and environmental performance for Council. For each of these waste streams, actions have been developed and aligned with the waste hierarchy.

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2. Overview

To separate our waste into the correct bins is not enough. As a municipality we need to reduce our impact on the planet. In terms of Waste Management, that means together as Council and Community we need to aim for zero waste.

Towards Zero Waste means reducing consumption and the amount of waste generated as a priority before deciding where we should dispose of unwanted items.

Maribyrnong City Council has a vision to become a city that generates minimal waste and considers that waste as a valuable resource to be managed sustainably.

This strategy identifies goals and actions to implement in the short and mid-term. All actions can be achieved within the next 3-5 years.

3. Context

This **'Towards Zero Waste Strategy'** aligns with and supports the strategic directions of the key Federal, State and Local Government plans, policies and regulations relating to waste. A full list is included in Appendix D.

In particular, this strategy closely aligns with the Metropolitan Waste and Resource Recovery Implementation Plan 2016 which includes four strategic goals:

1. Reduce waste sent to landfill
2. Increase organic waste recovery
3. Deliver community, environmental and economic benefits
4. Plan for Melbourne's growing population

This **'Towards Zero Waste Strategy'** shall be read in conjunction with the following Council waste documentation:

- Waste Management Policy 2019
- Provision of Waste Management Services (Appendix F)
- Waste Management Planning Guidelines for Residential and Commercial Developments

3.1 Waste Hierarchy

The Environmental Protection Act 1970 includes the waste management hierarchy. This hierarchy is the underlying principle of waste management policies in Australia. It establishes the order of preference for waste management.

Figure 1 EPA Victoria Waste Management Hierarchy

The avoidance of waste generation is considered the most preferable outcome, and disposal to landfill considered the least preferable. It has the potential to influence all municipal activities that generate waste.

A definition of each waste management hierarchy outcome is outlined in Appendix B.

The best practice initiatives identified in the action plan have been considered with respect to this classification system.

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4. Where Are We Now?

The City of Maribyrnong has delivered waste services to its community for over 24 years, since it formed in 1994 from the merger of the City of Footscray and parts of the City of Sunshine.

A lot has changed since then. In 2004, Council introduced co-mingled recycling bins to all residential properties and also made these available to small commercial and retail properties. Prior to 2004, recycling services were provided for houses only, with recycling crates provided for bottles and cans, and paper and cardboard collected in separate tied bundles.

In 2004, multi-unit dwellings also received recycling services for the first time, with the introduction of skip bins for larger properties for both waste and recycling.

In 2006, garden organic bins were also made available to residents on a user pays basis.

Since 2004, Council waste services have grown from just collecting rubbish to a full waste management service, including:

Highlights 2001 - 2016

59% reduction in recycling contamination
6% increase in recycling rate
20% reduction in total waste created
16% increase in population

- Landfill, Recycle and Garden bins collected kerbside
- Hard waste and green waste kerbside annual collection (booked)
- Textile kerbside collection (at call)
- Clothing & Electrical Recycling Hubs
- Public Place Recycling (PPR)
- Street litter collection (including street litter bins)
- Street sweeping;
- Collection of illegally dumped waste, usually hard rubbish
- Collection of waste and recyclables generated at local Festivals and Events
- Program for management of drop-off of household hazardous/toxic waste (e.g. household chemicals, motor oils, paint, car batteries, gas bottles etc)
- Development of Waste Guidelines for Residential and Commercial developments
- Community Programs such as Compost Community and My Smart Garden
- Community Education including the launch of Council's free Maribyrnong Bins & Recycling App

All of these programs have helped achieve current successes. Three of the most significant are:

- 59% reduction in recycling contamination
- 6% increase in recycling rate from 28% to 34% (2001 – 2016)
- 20% reduction in total waste created despite a growing population, from 759 kg/household/year to 637 kg/household/year.

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4.1 Our Waste Profile

Council waste data has been collected by Sustainability Victoria since 2001. This data includes kerbside garbage, recycling, green waste, hard waste and transfer stations.

The graph below shows the garbage, recycling and garden waste collected since 2001. The graph shows that even though population (dotted line) has steadily increased, that total waste generated in the City of Maribyrnong peaked in 2009.

Reasons for the change in generation are further discussed in section 3.4

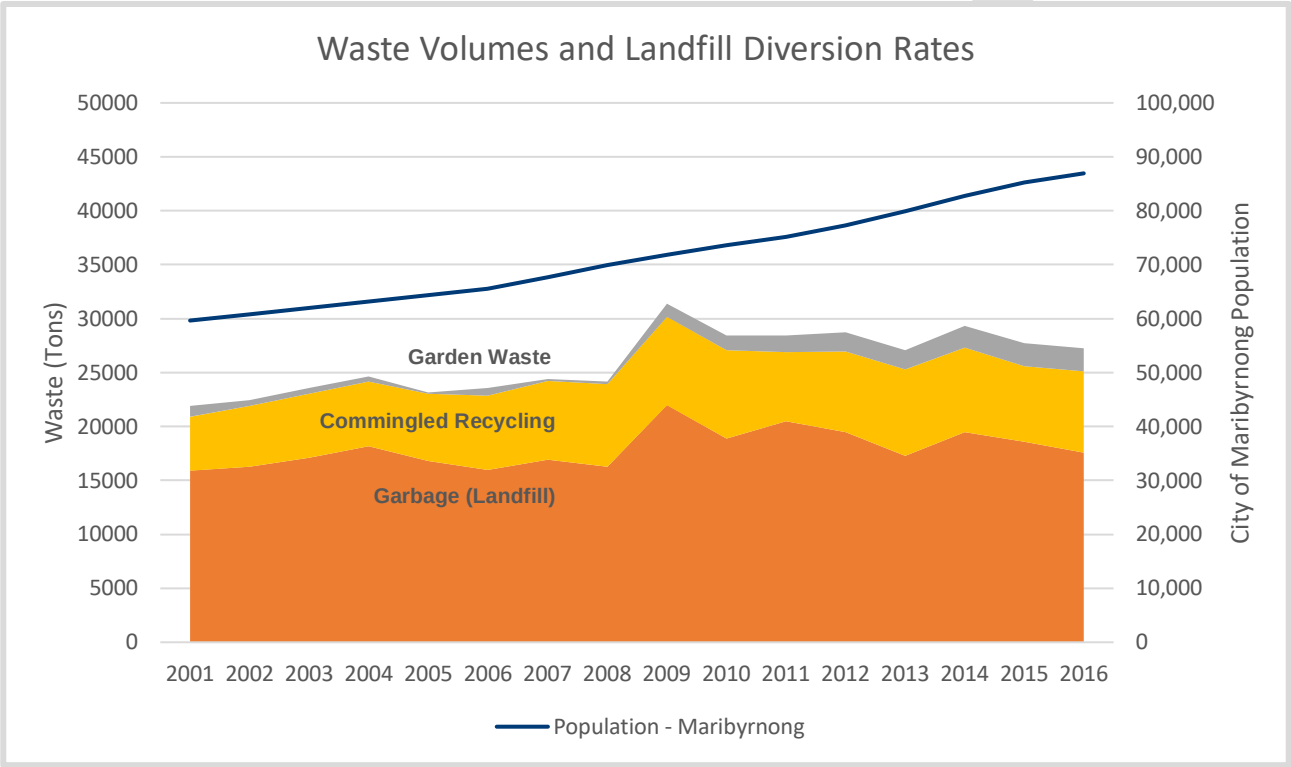


Figure 2 City of Maribyrnong Waste Volumes and Landfill Diversion Rate (LDR)

The actual figures for 2001 and 2016 and shown in Table 1and Table 2 . The data shows us that our garbage volume is still over double our recycling and garden waste volume combined.

Table 1 Waste composition 2001 and 2016 in kg/year

Year	Garbage Kg/year	Recycle Kg/year	Organics Kg/year	Total Kg/year
2001	15900	5010	993	21903
2016	17600	7528	2097	27225

Table 2 Waste composition 2001 and 2016 in percentages

Year	Garbage	Recycle	Organics	Total
2001	73%	23%	5%	100%
2016	66%	28%	6%	100%

4.2 What is in our garbage bin?

The average garbage bin in Maribyrnong City Council shows a large proportion of green and food waste, or organics.

In May 2019, an audit of kerbside bins across Maribyrnong City Council revealed that organic waste makes up 49% of our garbage bin.

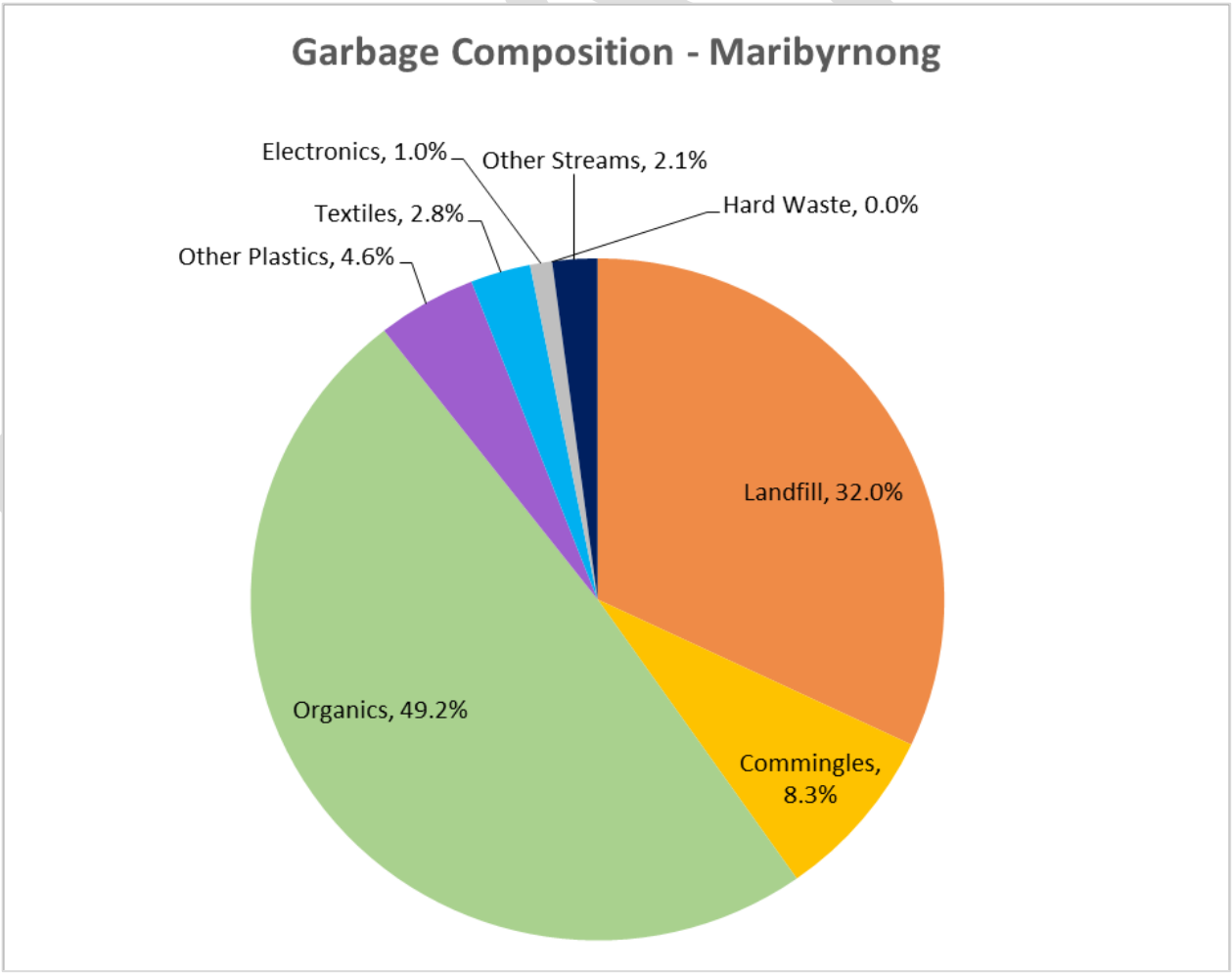
In fact, when we examine the contents found in the average kerbside garbage bin, the results show that just 32% of that waste is suitable for landfill.

This means that 68% of the waste currently being sent to landfill has the potential to be recycled and reused.

Council have identified goals in Section 6 to change the way we separate, reuse and recycle our waste so that we recover the maximum amount of these resources and divert them from landfill.

The figures on the right and below provide a visual breakdown of the contents found in the average residential kerbside garbage bin.

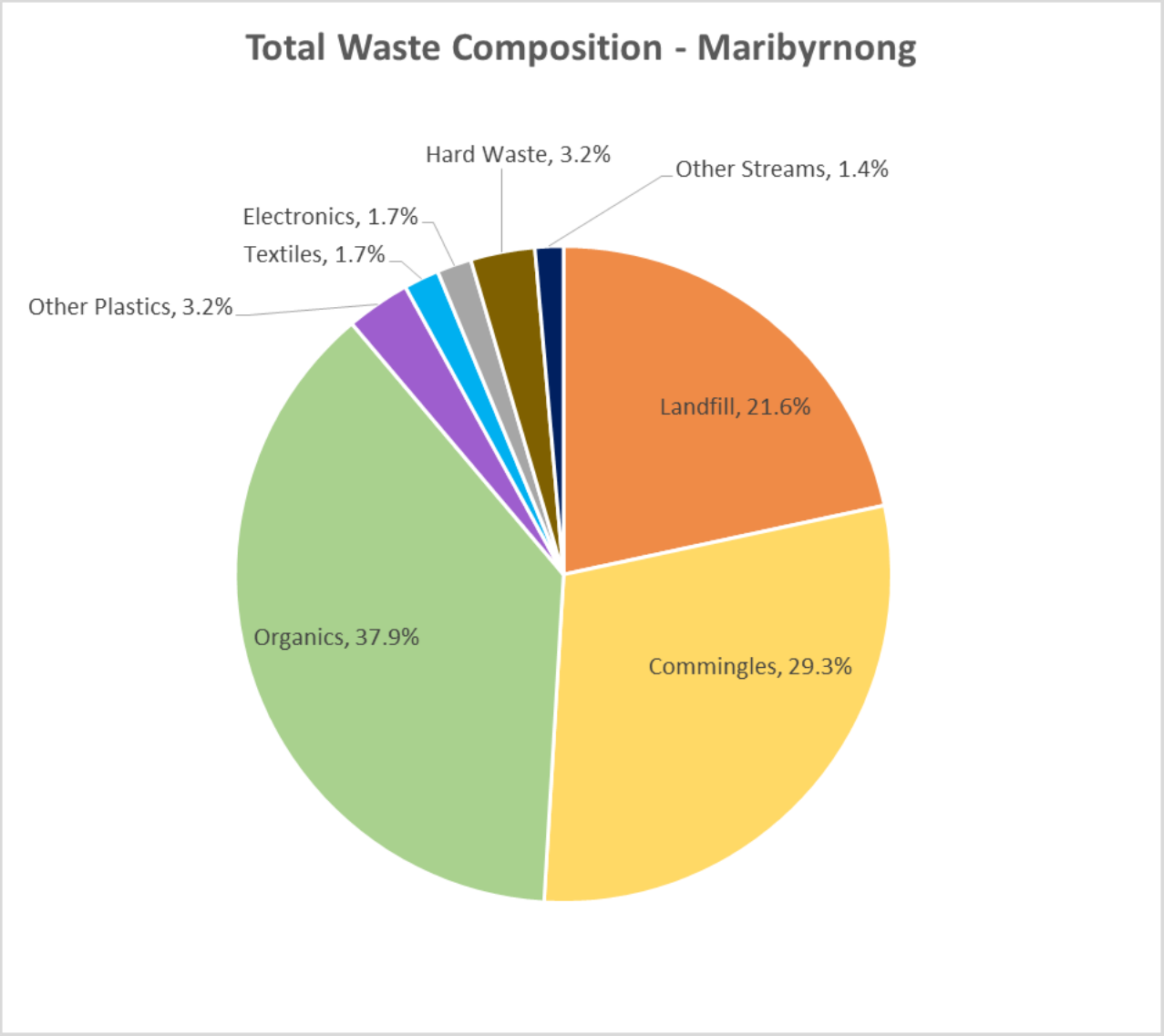
Figure 3 **What is going to landfill**



When we compile and examine all of the waste collected across Council, including commingled recycling, landfill, green waste bins, hard waste and green waste collected through the at-call service, we can analyse the waste composition across Council (see Figure 4).

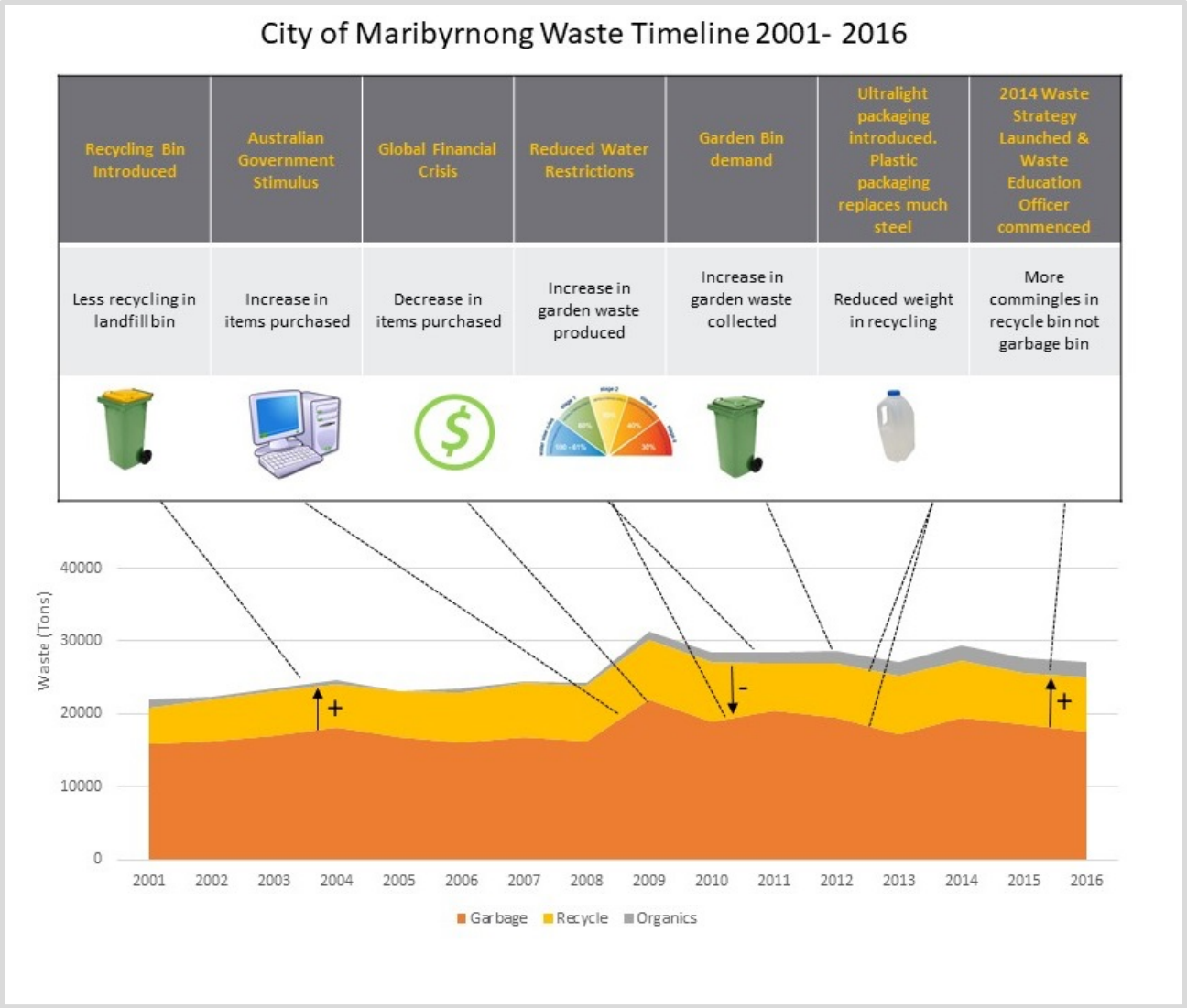
This data will inform the key strategic waste streams identified in section 8, with detailed action plans to reduce waste across these different categories.

Figure 4 **Total Waste Composition**



4.3 What has impacted our waste generation?

There have been several global and national events that have impacted how much and the types of waste we generate. The most significant events are illustrated on the waste timeline below.



The data in the graph above includes both waste collected kerbside in bins (garbage, recycle and garden), hard rubbish, textiles and branch and pruning collections.

The most significant spike in 2009 was caused by the Australian Government's stimulus package which caused an increase in the amount of waste we created, however recycling remained the same.

The Global Financial Crisis caused a decline in the amount of waste we created, impacting both garbage and recycling volumes. The change in garbage volumes matches changes in recycling volumes partly due to the garbage bin containing recyclables and food organics.

4.4 How do we compare to others?

4.4.1 Waste Streams

Sustainability Victoria collect data from all Victorian Councils. The common waste streams for which data is collected are garbage, recycle and garden bins, hard waste, bundled green waste and drop-off waste at transfer stations.

Our current service is the same as most councils in Victoria. The City of Maribyrnong kerbside service includes:

- Garbage bins (120 or 660L/1100L skips weekly)
- Recycle bins (240 or 660/1100L skips fortnightly)
- Garden Bins (User pays) (120L/240L fortnightly)
- Hard waste collections (Annual)
- Green waste - branch and pruning (Annual)

In addition we offer:

- Textile drop off and collection service
- Electrical waste drop off and collection service

Details of how the service applies to different building types is included in Appendix E

Figure 5 shows the City of Maribyrnong waste volumes show steady recycling and garbage volumes, both of which are highly influenced by social and climatic effects.

Figure 6 shows the Victorian State waste overall trends. These are less dramatically impacted by social events. The data also shows that most councils collect a significant amount of green (garden) waste. This volume of green waste has recently increased (2015-2016) due to the number of Councils who have introduced FOGO (Food Organics with Garden Organics). There is an even greater spike in the data expected with the release of the next data set.

> **Point A** on the graphs shows the impact of the 2008-2009 Government Stimulus package and the Global Financial Crisis on waste generation in Maribyrnong.
> **Point B** on the graphs compare the current volume of garden and food organics collected across Maribyrnong.

The data shows that the City of Maribyrnong does not collect the same proportion of green (garden) waste as most councils.

There are several reasons why the green waste volumes are low. It is likely to be a combination of:

- Affordability (this is currently a user pays service)
- Smaller blocks / Less garden space
- Home Composting / Composting Communities Program participation
- Community uptake of elderly services for gardening
- Community housing gardens maintained by DHHS

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Both graphs show that garbage volumes by weight are approximately double recycling volumes by weight.

Figure 5 City of Maribyrnong Waste Volumes (2001-2016)

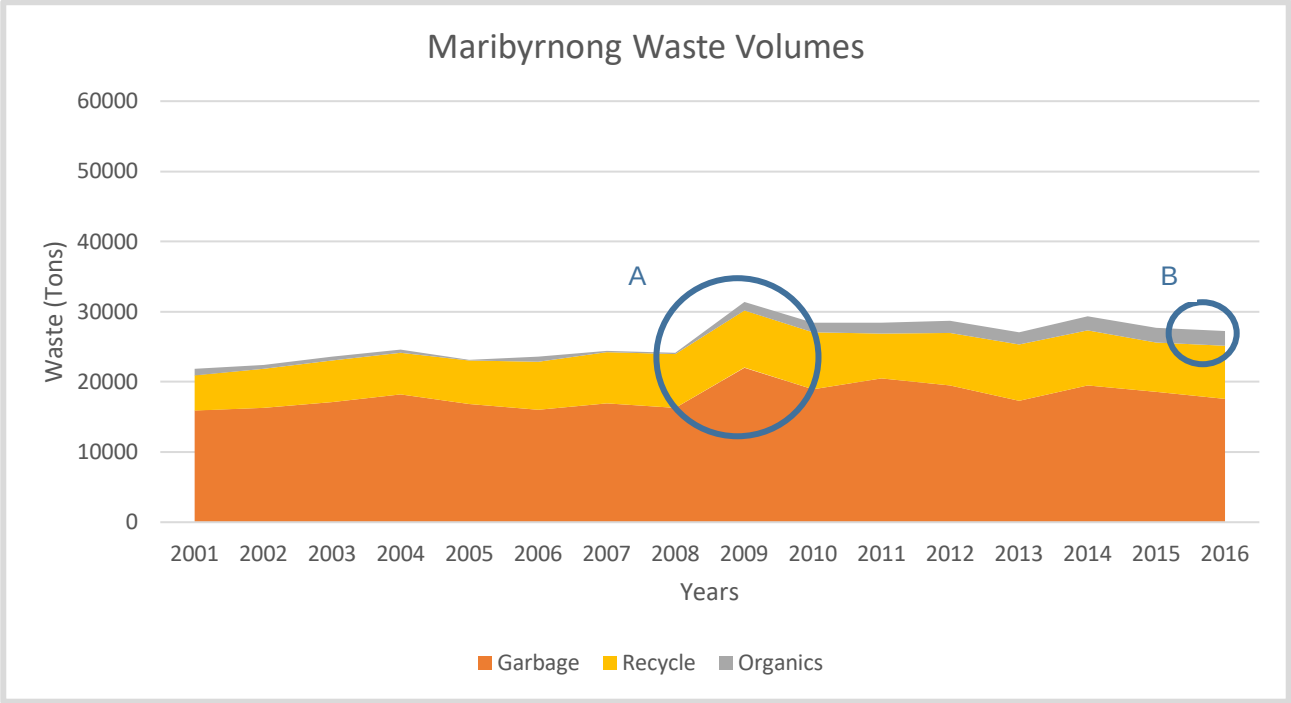


Figure 6 Victorian Waste Volumes (2001-2016)

4.4.2 Landfill Diversion Rate

The Landfill Diversion Rate (LDR) is the ratio between how much waste we generate and the amount we recycle or don't send to landfill. This rate includes both commingled recycling and green (garden) waste as part of the recycling stream. The landfill diversion rate for Victoria peaked in 2010.

The Victorian and Metropolitan Councils landfill diversion rates are very closely aligned. These landfill diversion rates peaked in 2010. The key reason the diversion rate peaked in 2010 is the significant volume of green waste produced. The green (garden) waste volumes dropped with the introduction of water restrictions and increased again after they eased in 2012.

The City of Maribyrnong does not collect as much green (garden) waste using the kerbside bins as the average council in Victoria and water restrictions did not have the same impact on the City of Maribyrnong's waste volumes.

Figure 8 shows how much closer the City of Maribyrnong landfill diversion rate is to the state average for Victoria when green (garden) waste is not included in the diversion rate.

This highlights the importance of collecting food and garden waste if we are to increase our diversion rate as a City.

Figure 7 Landfill Diversion Rate including Garden Waste (Green bin)

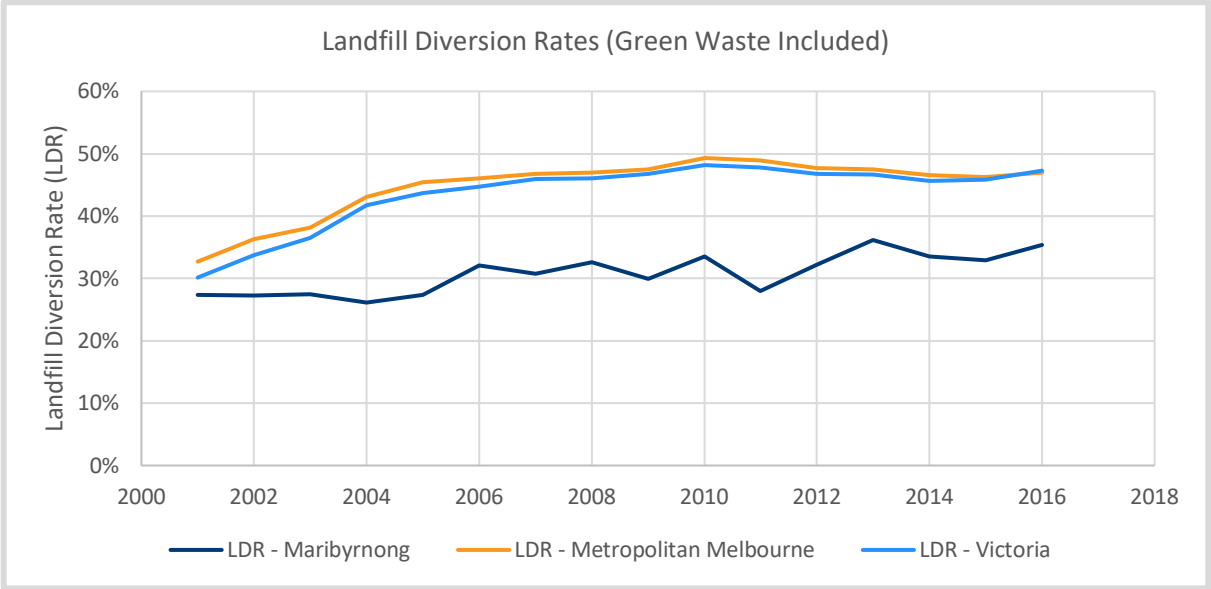
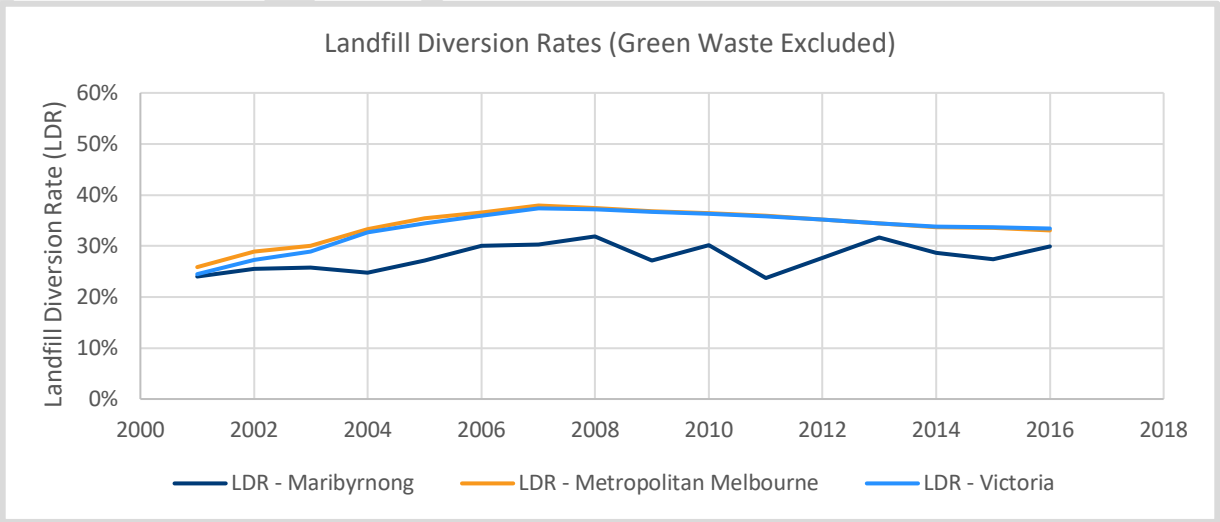


Figure 8 Landfill Diversion Rate without Garden Waste (Green bin)



4.4.3 Overall Waste Generation

It is important to increase recycling, but it is just as important to reduce the amount of waste we create. As we see in the waste hierarchy, the first principle is to avoid waste.

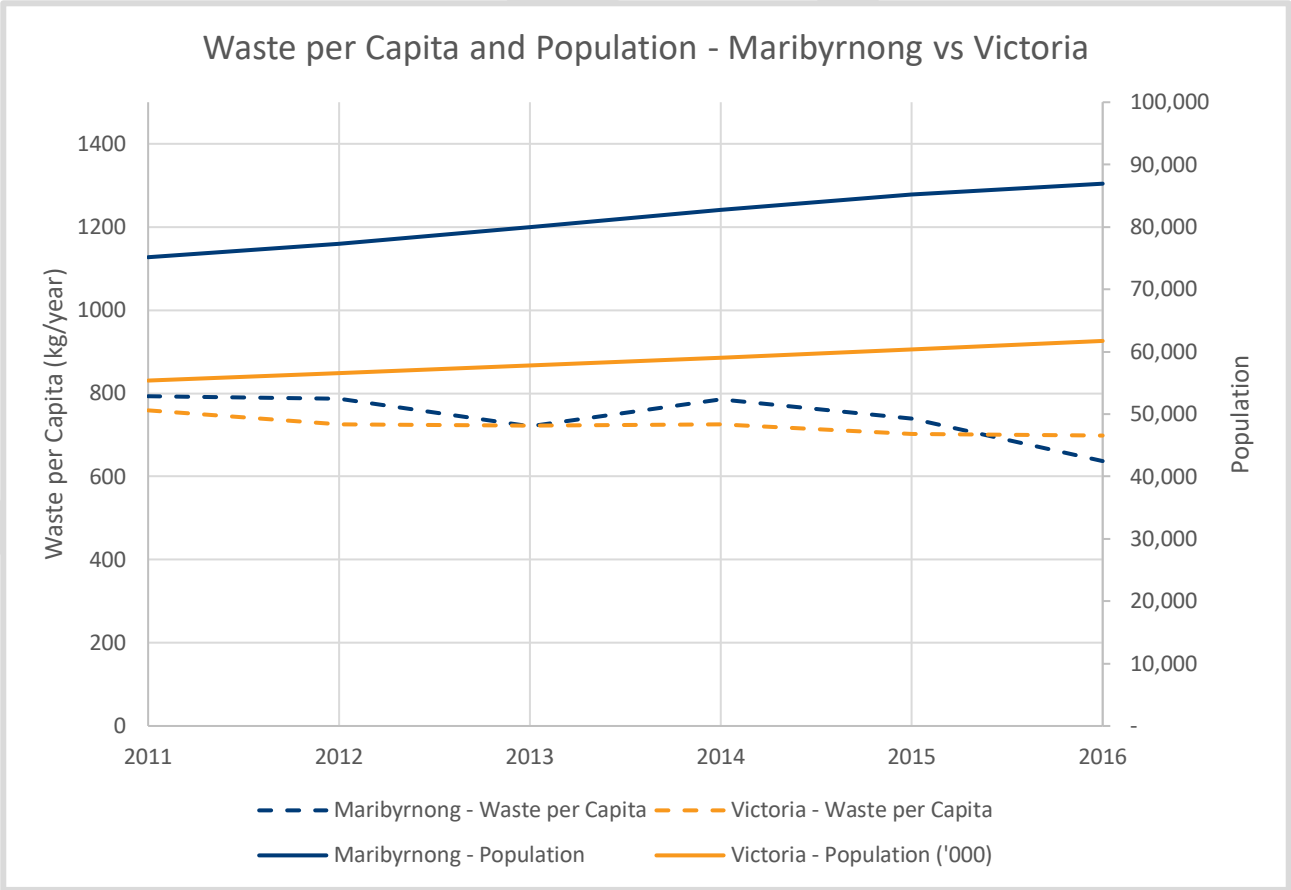
Overall, it is positive to see that the City of Maribyrnong overall waste generation rate per household going to landfill has declined over time.

The actual figures for 2011 and 2016 and shown in Table 3. The data shows us The City of Maribyrnong achieved a reduction in the amount of waste we create of 20 percent while the State average saw a decrease of 8 percent. Considering the population increase in the City of Maribyrnong was faster than the state average, this is an even greater achievement.

Table 3 Waste composition 2001 and 2016 in kg/year

Year	Location	Total Kg/year	Waste Generation Change	Population	Population Change
2011	Maribyrnong	793	-20%	75154	+16%
2016		637		86942	
2011	Victoria	759	-8%	5,537,817	+11%
2016		698		6,173,172	

Figure 9 City of Maribyrnong Waste Per Household and Population



5. Achievements

The 2014 Waste Minimisation Strategy identified 58 actions which could be implemented to assist in meeting our waste minimisation objectives and optimise waste services for the community.

A review of the 2014 Strategy conducted in November 2018 revealed that 91% of the actions identified have been completed or are in progress or ongoing.

Programs of significance are discussed below.

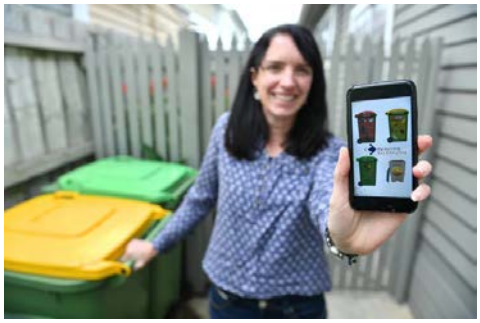
5.1.1 Compost Community program

In 2015 Maribyrnong City Council launched the Compost Community Program to provide residents with access to subsidised home composting systems and free educational resources to assist them in reducing and composting food waste.

Since the launch of compost community, Maribyrnong now have 1185 compost community members. Surveys of the community indicate that 568,826 litres (568.83 cubic metres) of food waste are diverted from landfill each year as a result of the program, saving 864,616.33 emissions of CO2-e (kg).

5.1.2 Maribyrnong Bins & Recycling App

In November, 2017, Council launched the Maribyrnong Bins and Recycling App. The app was designed to create a user friendly tool that would streamline council waste and recycling information, and help to educate the community on how to access services, reduce waste, and dispose of items correctly.



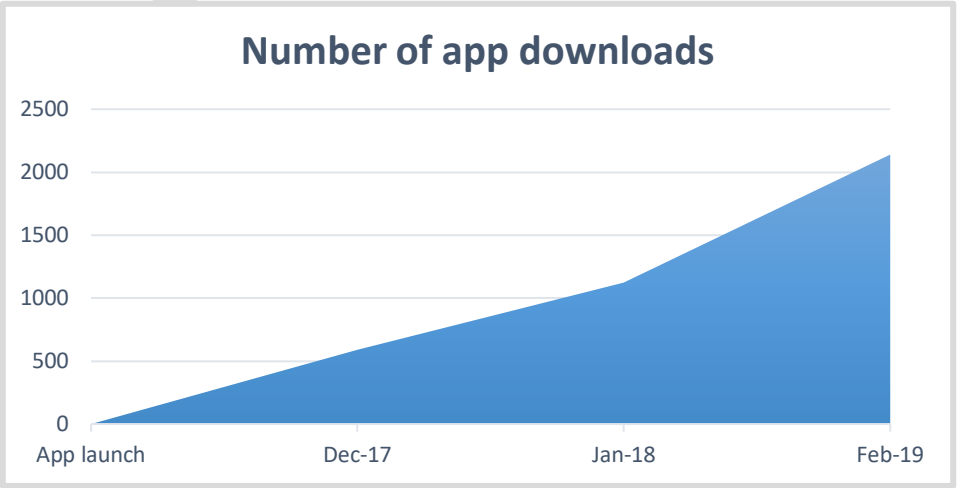
Prior to the release of the app, Council's waste and recycling information was largely restricted to various brochures, print materials, and the Council website. This resulted in ongoing print costs and use of paper resources, a reliance on distribution channels, and management of multiple pages on the Council website.

The app enabled Council to centralise this information and create a user-friendly, personalised tool that residents could use to:

- Look up various items and find out how to dispose of them using one of Council's waste services, or through an alternative recycling program.
- Book a hard waste service
- Find out their bin night
- Link to Council recycling and waste services such as green waste bins, compost community programs and recycling hubs
- Report illegal dumping
- Receive notifications regarding any relevant programs, events or changes to service (for example: the installation of electronic and textile waste hubs and the changes to bin collection schedule over the Christmas and New Year period)
- Find out about upcoming Council events
- Report damaged bins, order replacement bins, or order additional bins
- Find their local tip or transfer station
- Send enquiries about waste and recycling.

Since the release of the App in November 2018, Council have received 270 enquiries from residents through the waste app, with 2140 residents using the application.

Figure 10 Timeline of resident downloads of the Maribyrnong Bins & Recycling App



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5.1.3 Clothing and electrical recycling hubs

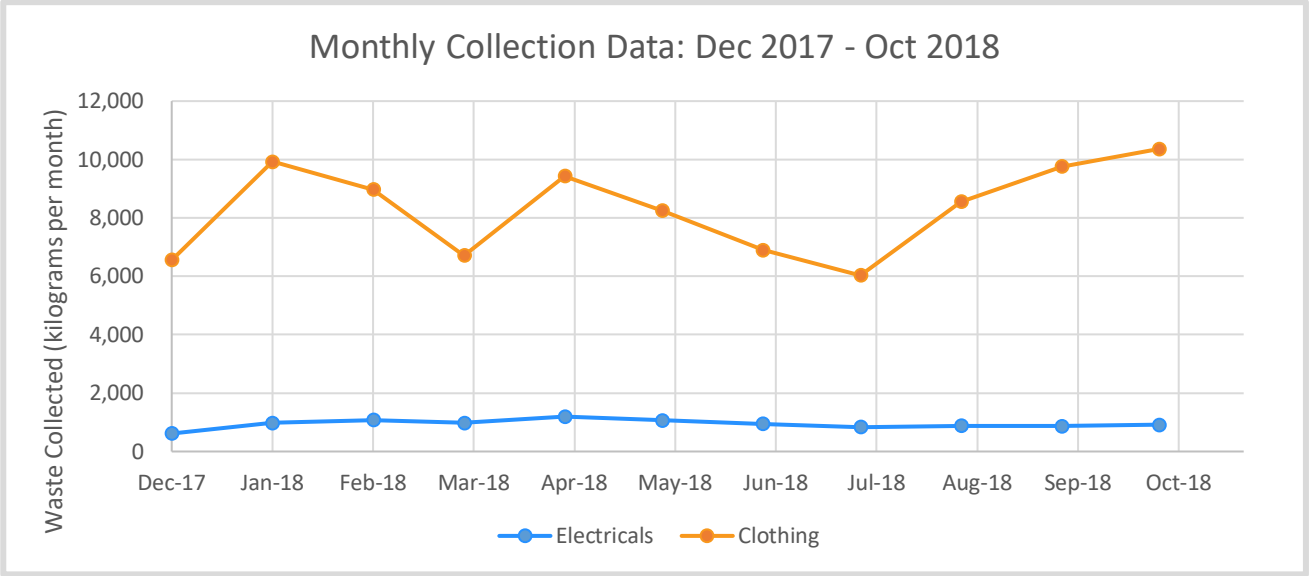
In December 2018, Council approved a pilot program with SCR Recycling to install 9 free clothing and electrical recycling drop off hubs across the City.

Clothing and electrical waste are two of the fastest growing waste categories in Melbourne. Combined, these two waste streams make up approximately 5% of waste sent to landfill. This is estimated to be around 950 tonnes per annum in the City of Maribyrnong – around the same weight of hard rubbish collected across the municipality in 2017.

Providing options for electrical waste recycling is also a key priority for Councils across Victoria, in preparation for the State Government's ban of e-waste from landfill which will come into effect on 1 July 2019.

Since the installation of the clothing and electrical drop off hubs in December 2018, over 93,278 kg of clothing and textiles have been diverted from landfill via these hubs. In addition to saving $15,275.10 in landfill fees, this also represents a reduction of 6,037,284 kg of greenhouse gases.

Figure 11 Monthly Collection Data for Textiles and Electric Hubs



5.1.4 Thread Collect

In October, 2018 Council also launched a household clothing and electrical kerbside collection service, 'Thread Collect', which enabled residents to book a free collection of their unwanted clothing and electrical items.

Since the launch of Thread Collect, 271 residents have booked a collection, resulting in 3941 kg of electrical and clothing items being diverted from landfill.

5.1.5 Recycling education videos

To further educate and engage residents around best recycling practices, Council developed a series of videos in March 2019 with instructions on how to sort recycling correctly and avoid common mistakes.

In addition to the master video, Council developed a further 4 short videos to focus on key issues, such as;

1. How to test if a plastic is recyclable
2. Why it is important not to bag recyclables
3. How to recycle electronic and clothing waste
4. A quick guide to recycling in Maribyrnong

These videos were developed in light of the increasing community use of social media and the opportunities this provides to reach residents on a daily basis.

Consumer trends have shown that video content, particularly short videos are the most popular form of content on social media, achieving greater engagement and sharing. 'How to' videos are in the top three most popular type of video viewed on Youtube.

Figure 12 **YouTube How To Recycling Video**

6. Where Are We Headed?

Our vision is to be a clean and innovative City that generates minimal waste and considers that waste as a valuable resource to be managed both affordably and sustainably.

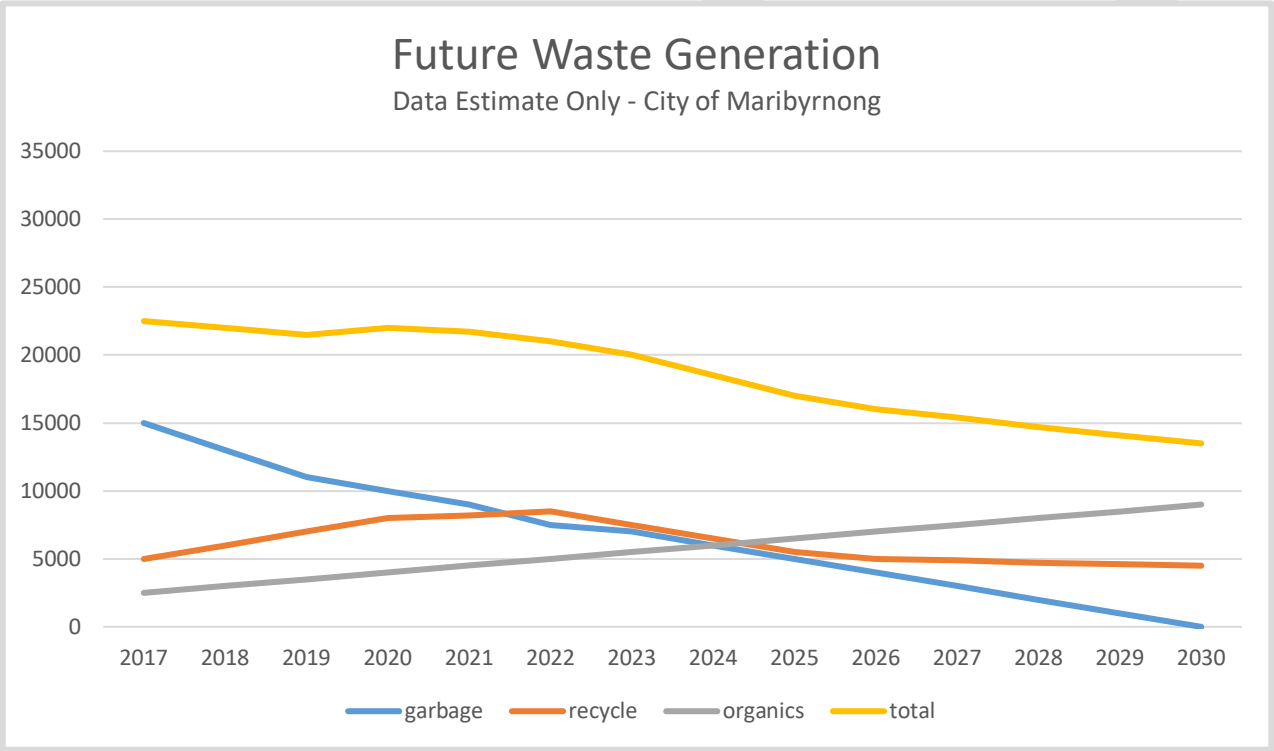
Council aspires to become a resource smart city that moves away from the paradigm of a 'take, make, waste' society, and instead advocates and supports a system of 'make, use, return'.

In line with the zero waste hierarchy, a much stronger focus on avoiding resource use in the first place is needed, with the goal of transitioning toward a system where landfilling is no longer required.

The graph below illustrates our goal of decreasing total waste generation, despite an increasing population.

Achieving this goal will require a change in mindset of the broader community to rethink the way we choose products and how we treat these products at the end of their life. We must become stewards of natural resources rather than primarily consumers and producers of waste.

Figure 13 **City of Maribyrnong Future Waste Generation Estimate**



In previous strategies, Council focused on essential improvements in recycling, and set goals to align with the average diversion rate of the Melbourne Metropolitan region. Council now aspires to achieve much more ambitious targets, to become leaders in resource management and recovery.

In line with Waste Policy 2019, Council have established aspirational targets to achieve a waste diversion rate of 60% by 2030 and move toward zero waste to landfill by 2050.

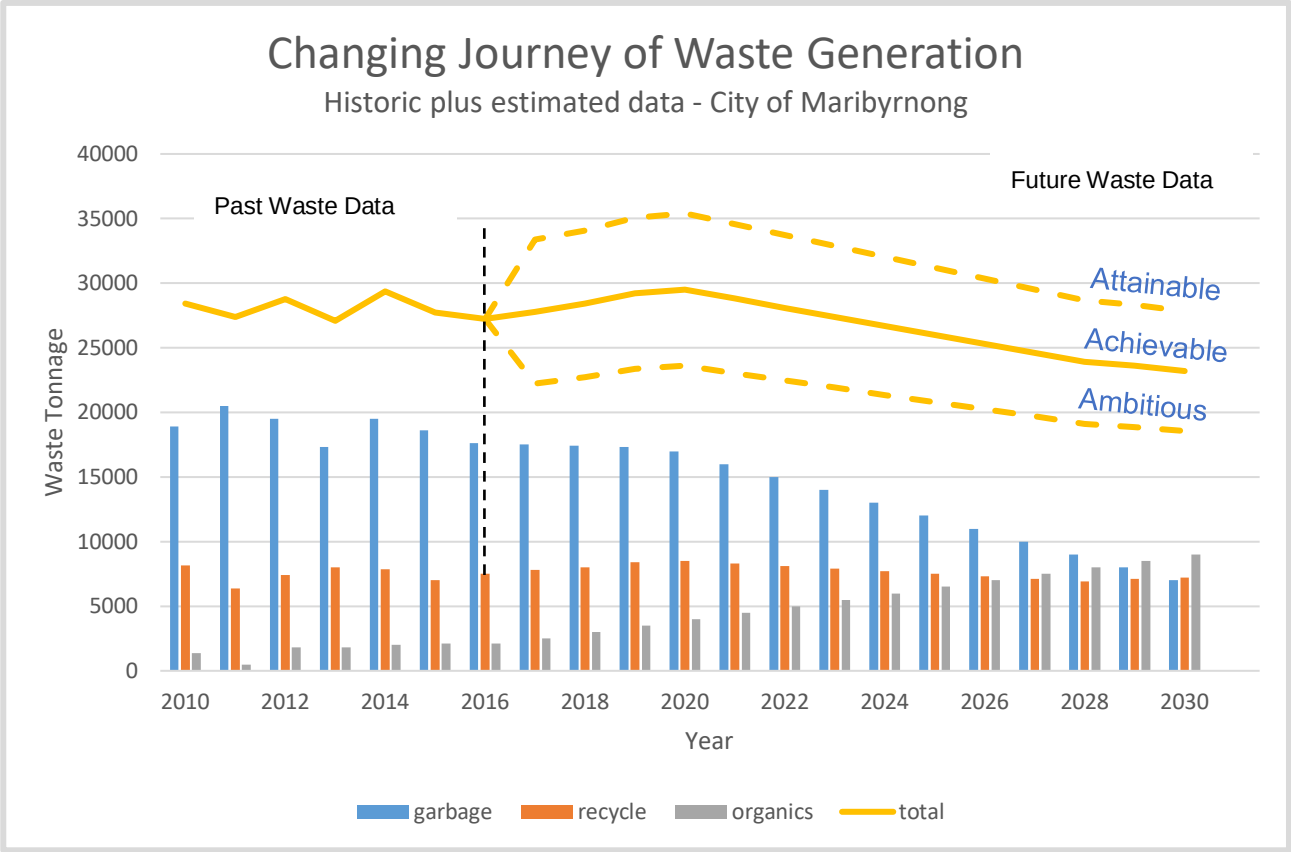
Council acknowledges that achieving these ambitious targets depends on developments in the waste industry which are outside Council's control, such as improved recycling technology and changes to regulations and policies.

6.1 Long term journey

When we combine the actual data from 2001 to 2016 with our estimated or potential data, we can see the journey of change in waste generation over time and the true impact of reducing waste generation and diverting all possible materials from the landfill bin.

The dotted lines highlight a 20% increase and decrease beyond the aspirational target of reducing the volume of waste.

Figure 14 City of Maribyrnong Past and Future Waste Generation Trends



7. Objectives and Goals

Overall aspirational target is to achieve a waste diversion rate of 60% by 2030 and move toward zero waste to landfill by 2050.

The City of Maribyrnong Council Plan 2017- 2021 includes six key objectives:

- Objective 1: Strong Leadership
- Objective 2: Healthy and Inclusive Communities
- Objective 3: Quality places and spaces
- Objective 4: Growth and prosperity
- Objective 5: Mobile and connected city
- Objective 6: Clean and Green

This strategy has been developed to deliver several actions within Objective 6. The high level strategies included in the Council plan that relate to Waste Management are listed below.

Council Plan Objective 6: Clean and Green

Council will strive for a clean, healthy city for people to access open spaces, cleaner air and water and respond to climate change challenges.

Strategies achieving the objective		**Strategic indicators measuring success**
6.3	Progress Zero Carbon Maribyrnong	Annual compliance with zero carbon corporate emissions
6.4	Improve the visual presentation, cleanliness and amenity of the city	Improved cleanliness in Footscray CBD with less graffiti, dumped rubbish and complaints
6.5	Substantially increase Council's waste diversion rate	Kerbside waste diversion improved from 34% to 46% by 2019-20
6.7	Incorporate Ecologically Sustainable Design and measures in Council buildings	Improved building energy efficiency and thermal comfort levels
6.9	Educate the community on environmental issues and best practice in waste management	Increased number of community members participating in environmental education programs

Waste Management Policy (2019)

Key Objectives	
1	Comply with the intent of the applicable Commonwealth and State environment legislation, regulations, standards, policies and initiatives.
2	Maintain a safe, transparent, affordable and sustainable approach to all Council waste management and resource recovery services and provide a consistent level of service to ratepayers and eligible properties (as detailed in Appendix B).
3	Ensure Council provide innovative solutions and strive for best practice waste and recycling services to process all types of waste generated across the municipality.
4	Keep pace with emerging technologies and actively participate with peak industry bodies, operators and organisations to advocate an improved and competitive waste and resource recovery industry.
5	Increase recycling and recovery rates, and reduce contamination across the municipal waste stream.
6	Reduce the amount of litter, illegal dumping, and stormwater pollution across Council.
7	Prioritise waste avoidance by reducing the consumption of goods and packaging.
8	Communicate with and educate our community about effective ways to reduce, reuse and recycle waste whether at home, work or play.
9	Continue to monitor, collate and report quality waste and recycling data across the municipality.
10	Adopt greater use of recycled materials and resources across all aspects of procurement.
11	Protect public health and minimise the environmental impacts associated with waste management services.

Towards Zero Waste Goals

The key goal to achieve a Toward Zero Waste Maribyrnong is to reduce overall waste generation.

Strategies achieving the objective		**Strategic indicators measuring success**	**% Change**
1	Increased Avoidance	Kerbside waste generation decreases from 637 kg per household per year to 570 kg household per year by 2022 (a 10% decrease).	-10%
2	Increase Reuse	Kerbside and drop-off reuse items increase from 110 tonnes/year to 133 tonnes per year by 2022 (an increase in 20%).	+20%
3	Increase Recycling	Kerbside recycling (Commingled and green waste) diversion from landfill rate increase from 34% per year to 40% per year by 2022.	+6%
4	Decrease contamination	Kerbside recycling contamination rates decrease from 7% to 5% by 2022.	-2%
5	Decrease recyclables in landfill	Kerbside landfill bin decreases percentage of recyclable items from 9% to 5% by 2022.	-4%
6	Increase source separation	Range of destinations for reusable and recyclable products increases by 20%	+20%
7	Increase use of recycled content in construction	Council construction contracts to increase requirement for recycled content target 25% recycled content by 2022.	+25%
8	Increase use of recycled content in public realm	Council assets to increase requirement for recycled content by 25% by 2022.	+25%

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8. Strategic Actions

To achieve the Objectives and Goals established in Section 6, this strategy identifies seven key waste streams which represent the greatest potential in terms of waste diversion and environmental performance for Council.

Strategic actions for each waste stream have been developed and grouped in order of the waste hierarchy.

The preferred actions have more influence on reducing waste generated and ensuring reuse, before actions that influence recycling, recovery and treatment.

8.1.1 Key strategic waste streams

Organics

Plastics

Textiles

Electrical waste

Hard Waste

Litter

Other Streams

Further areas and actions have also been identified under:

- Public realm and construction materials
- Council Policy

The following action plan has been grouped by Residential items and Commercial items.

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8.2 Residential

8.2.1 Organics

Organics

What is it:

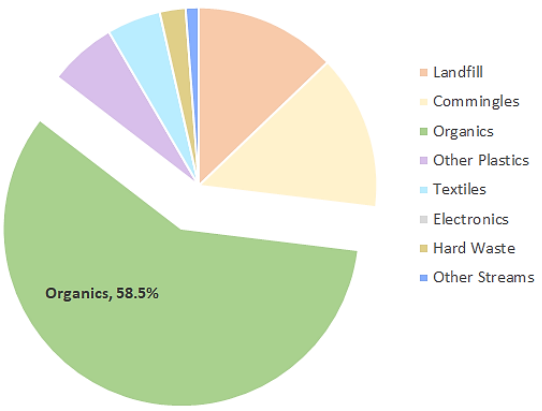
Organic waste typically refers to residual or discarded biodegradable material of either plant or animal origin. In domestic environments, organic waste commonly comprises of kitchen food waste, garden waste, and other organic substances such as pet hair and dust. Other material such as soiled paper towel and tissues may also become part of the organics stream as they are no longer recyclable due to low structural quality and contamination.

Examples:

Fruit & Vegetable Scraps
Coffee Grounds
Egg Shells
Leftover Food
Meat Scraps
Tissues / Kitchen Towel
Garden Waste (Leaves, Branches, etc.)
Fats, Oils and Greases (FOGs)
Vacuum Cleaner Dust
Pet Hair

Current Issues:

When organic matter is disposed in landfill, it undergoes anaerobic decomposition which produces methane, a greenhouse gas that is 25 times more potent at radiation-trapping than CO_2. Alternatively, organic waste can be treated to create other valuable resources such as compost and soil conditioning products, which feed back into the natural environment. Although most modern landfills are typically equipped with methane capture systems to minimise their environmental impact, the opportunity for resource recovery is lost.



Current Performance:

Diverting organic waste from landfill is critical. This is particularly true in the case of food waste. According to Sustainability Victoria, only 10% of food waste managed in Victoria was recovered in 2015-16 with an estimated of 887,000 tonnes going to landfill.

Improving recovery of organic matter provides an opportunity to significantly reduce the amount of waste sent to landfill and its adverse impacts to the environment.

Maribyrnong Council currently has lower collection rate and tonnages for green waste than the state or municipal average. This waste stream therefore presents a significant opportunity.

Strategic Actions - Organics

Short Term Actions (within next 3yrs)			
Hierarchy	**Action**	**Detail**	**Who**
AVOIDANCE	Love Food Hate Waste	Conduct educational program on reducing domestic food waste.	OWE
AVOIDANCE	Food Waste Outreach	Promote food waste charity programs (i.e food banks and soup kitchens) to commercial uses such as grocery stores, restaurants, school cafeterias and other food service venders on to prevent food waste.	OWE
RECYCLING	FOGO Service Collection	Incorporate food organics into the existing user pays green (garden) waste service.	CMW
RECYCLING	Provide universal FOGO Bin to single dwellings	Introduce free Green/FOGO Bin for residential rate payers	SO/ CMW
RECYCLING	Backyard / Neighbourhood Composting	Promote and provide incentives for homes, communities, schools and businesses to set up on-site food and garden waste compost systems via the Compost Community and Share Waste programs	OWE
RECYCLING	Community Gardens	Support the establishment and use of community gardens.	SO
RECYCLING	Coffee Grounds Recycling	Encourage cafes/restaurants to recycle their ground coffee waste via service provider such as reground.	SO
RECOVERY	MUDs On-site Organics Treatment	Develop programs to support the use of communal on-site organics treatment in apartment buildings such as worm farms, compost bins, digesters, dehydrators, etc.	CMW/ SO
Medium Term Actions (within next 5yrs)			
Hierarchy	**Action**	**Detail**	
RECYCLING	Trial FOGO in MUDs	Offer a FOGO collection service for multi-unit developments	SO
RECYCLING	Weekly FOGO Service	Investigate feasibility of weekly FOGO collection service.	CMW
RECYCLING	Communal Organics Bins	Introduce communal bins in public spaces and/or parks for the disposal of household organic waste, with particular focus on high-density housing estates.	SO
RECYCLING	Public Place Organics Bin Trial	Trial the implementation of a third bin for organics disposal in prominent public places where food consumption and takeaway dining is common.	SO/ CMW
TREATMENT	Food Disposal Units (Insinkerators)	Adopt policy and/or planning guidelines for insinkerators to be plumbed into on-site organics treatment (i.e. dehydrator/sludge tank/digester) or sewer system. Managed through planning permit requirements.	CMW
And Beyond… (within next 10yrs)			
RECOVERY	Advanced Food Waste Recycling Technology	Investigate potential to implement/endorse advanced food waste recovery technologies within the municipality (i.e. waste to energy)	CMW/ SO

Acronym Breakdown

SO	Sustainability Officer	OWE	Officer Waste Education
CMW	Contract Manager Waste	F&ET	Festival & Events Team

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8.2.2 Plastics

Plastics

What is it:

Plastics are made from an extensive variety of petroleum products, varying in densities and additives. In general terms, plastics can be classified as either hard (rigid) plastics or soft (flexible) plastics.

Rigid plastics are widely used for products such as bottles, containers, toys, pipes and homewares/furniture. Conversely, the majority of soft plastics are used for packaging film, laminated packaging film (e.g. potato chips packaging), plastic bags, builder's film, and agricultural films such as bale wrap.

Hard Plastics:

Milk Bottles
Soft drink/Water Bottles
Takeaway Containers
Toiletry Bottles/Tubes (Shampoo, Moisturizer, Soap Dispenser)

Soft Plastics:

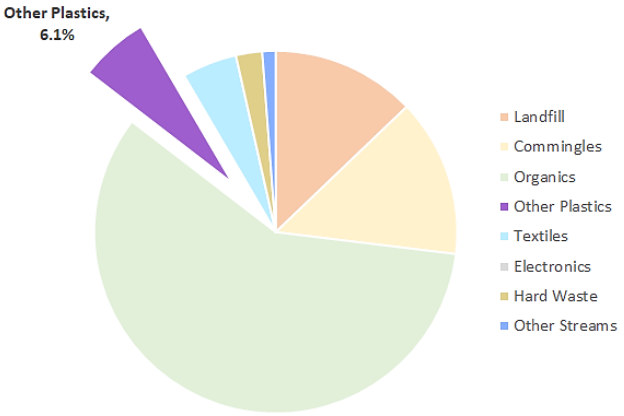
Packaging Film
Plastic bags
Chip Packets
Cling wrap
Chocolate/Lolly Wrappers

Current Issues:

At present, a wide range of household hard plastics can be easily separated from landfill via a kerbside commingled recycling service. However, household soft plastic recycling is much more limited in that it can only be recycled through drop-off systems such as REDcycle. This relies heavily on user understanding and willingness to participate in the program.

Although education and increasing awareness plays a significant role in soft plastics recycling the following factors also need to be taken into consideration:

- Lack of available collection systems and locations.
- Lack of processing facilities available.
- Costs associated to processing and removing composite materials in waste plastics.
- Reduced product quality after reprocessing.



Current Performance:

Hard plastic items are accepted and recycled via the commingled kerbside bins, however there is currently no soft plastics accepted via the kerbside collection.

Soft plastics can be taken to drop off facilities at major supermarkets, however there is no available data for community uptake and use of this service.

Strategic Actions - Plastic

Short Term Actions (within next 3yrs)			
Hierarchy	**Action**	**Detail**	**Who**
AVOIDANCE	Single Use Plastics Council Ban	Adopt a policy to prevent/ban the use of single use plastics such as disposable shopping bags, plastic straws, balloons, disposable coffee cups/pods within Council operations, facilities, functions and events.	SO/ FET
AVOIDANCE	Single Use Plastic Prevention	Conduct educational program on preventing the use of single use plastics across the wider municipality/community.	OWE
AVOIDANCE	Develop Local Wash Against Waste Trailer	Investigate option to develop or support hire of local wash against waste trailer for events to avoid the use of single-use items at food related festivals and events.	OWE/ SO/ F&ET
AVOIDANCE	Update Local Law – Bagging Rubbish	Change Local Law requiring all general waste to be bagged before disposing of in kerbside bin.	SO
REUSE	Recycled Plastic Infrastructure	Introduce and/or prioritise the use of recycled plastic materials and items for new or replacement public place infrastructure within the municipality (i.e. park bench, street planter boxes, playground equipment, etc.)	CMW
RECYCLING	Kerbside Soft Plastics Recycling	Investigate option to integrate soft plastics disposal into the comingled recycling bin for residents using the 'bag the bag" concept (soft plastic items collected within a plastic bag, tie bag at top and place in recycling bin).	SO/ CMW
RECYCLING	Soft Plastics Drop-off Hubs	Partner with REDcycle (or similar local organisation) to incorporate soft plastics drop-off provisions in addition to the existing clothing and electrical drop-off hubs across the municipality.	SO/ CMW
RECYCLING	Container Deposit Scheme	Investigate viability for municipal level Container Deposit Scheme.	

Acronym Breakdown

SO	Sustainability Officer	OWE	Officer Waste Education
CMW	Contract Manager Waste	F&ET	Festival & Events Team

NOTE: In today's society, the development and use of plastics is part of a rapidly changing environment. As such, any medium and long term strategic actions for plastics are not considered viable within the scope of this document.

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8.2.3 Textiles

Textiles

What is it:

Textiles/ waste typically includes clothing and textile items such as clothing, shoes and bags.

At the municipal level, textile waste is growing rapidly as a result of increasing fast fashion. Fast fashion produced from global supply chains is driving excessive purchasing of affordable new clothing, which is often discarded after a few wears

Examples:

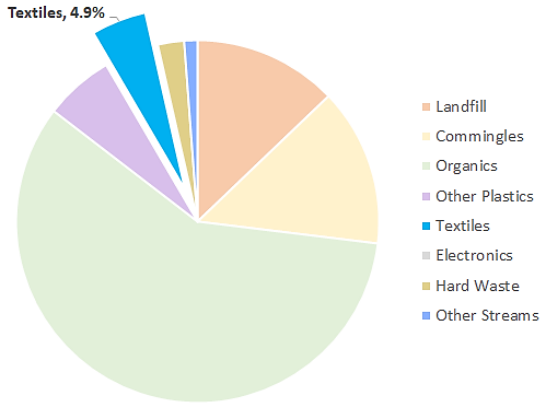
Clothing
Manchester
Stuffed toys
Hats / Shoes / Handbags
Belts / Scarves / Accessories

Current Issues:

Textile and charity items are not suitable for kerbside commingled recycling collection, yet due to the growing fast fashion movement, more and more items are being disposed of by the community. Many of these items end up in landfill as a result.

Australians are the world's second largest consumers of textiles, buying on average 27 kilograms of new clothing and other textiles each year. Of this amount, approximately 23 kg end up in landfill.

While textiles made of natural fibres are biodegradable, the majority of "fast fashion" textiles are now made of synthetic fibres. It is estimated that two thirds of clothing items disposed to landfill are made of synthetic fibres, which can shed thousands of micro plastic particles when washed or disposed of.



Current Performance:

Council currently provides a service to collect and recycle textiles via a series of free drop off points throughout the City, via mobile drop off hubs which are deployed in high-use areas, such as sporting grounds, and via a booked collection service, 'Thread Collect'.

For other charity waste, where items are in good condition, Council promote local charity organisations who accept these goods. There is no available data on the quantity of these items collected by local organisations.

Strategic Actions – Textiles

Short Term Actions (within next 3yrs)

Hierarchy	Action	Detail	Who
REUSE	Reuse Initiatives	Better promote initiatives for the reuse of textile/charity waste such as Buy it Back Day, Flea Markets, Garage Sales, Buy Swap Sell Social Media Groups and Clothing Swaps.	OWE
REUSE	Reuse Facilities & Workshops	Advocate and support repair/reuse facilities (i.e. repair café, community shed) and workshops with local community organisations.	OWE/ SO
RECYCLING	Increase Drop-off Hub Locations	Establish more clothing drop-off hubs throughout the municipality to improve accessibility for residents.	CMW
RECYCLING	Charity Goods Kerbside Collection Service	Expand and promote Thread Collect service, or clothing collection service across Council	SO/ CMW

Acronym Breakdown

SO	Sustainability Officer	OWE	Officer Waste Education
CMW	Contract Manager Waste	F&ET	Festival & Events Team

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8.2.4 Electrical Waste

Electrical Waste

What is it:

E-waste, or electrical waste is a popular, informal name for electronic products nearing the end of their useful life. E-waste specifically refers to any electronic or electrical equipment or anything with a plug, battery or cord that is no longer working or wanted.

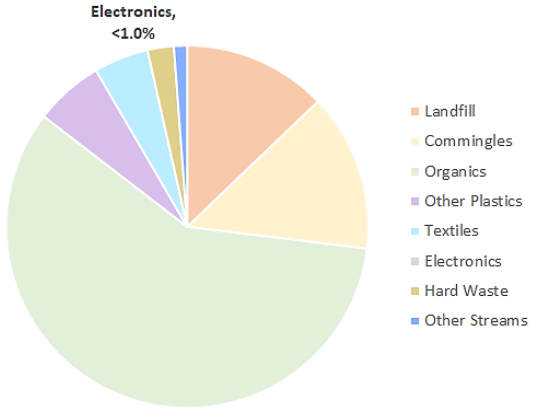
Examples:

Phones
Computers / Laptops / iPads
Keyboards / Mouse / Monitor
Televisions
Whitegoods (Fridge, Vacuum, Microwave)
Gaming Consoles
Remote Control Cars / Drones
Digital Watches
Electronic Tools (Drills, Sewing Machines)
Appliances (Hairdryers, Electric mixer, Blender)

Australians are among the highest users of technology, and e-waste is one of the fastest growing types of waste in Australia.

E waste items are not suitable for kerbside commingled recycling collection, yet due to the rapid consumption and obsolescence of electrical items, many of these end up in landfill as a result.

E-waste can contain hazardous materials including heavy metals and glass which if broken or damaged pose an unacceptable environmental hazard. Yet around 90% of what is used to make electrical items such as televisions and computers can be recycled, saving valuable, finite resources.



Current Performance:

Council currently provides a service to collect and recycle electrical waste via a series of free drop off points throughout the City, via mobile drop off hubs which are deployed in high-use areas, such as sporting grounds, and via a booked collection service, 'Thread Collect', which incorporates both clothing and electrical waste.

Data is not available for the quantity of e-waste which is taken to neighbouring transfer stations.

Strategic Actions – Electrical Waste

Short Term Actions (within next 3yrs)			
Hierarchy	**Action**	**Detail**	**Who**
REUSE	Reuse Initiatives	Better promote initiatives for the reuse of e-waste items and products such as Buy it Back Day, Flea Markets, Garage Sales, Buy Swap Sell Social Media Groups and online market places (e.g. Gum Tree).	OWE
RECYCLING	Increase Drop-off Hub Locations	Establish more e-waste drop-off hubs throughout the municipality to improve accessibility for residents.	SO/ CMW
RECYCLING	E-waste Recycling Campaign	Launch educational campaign to provide clarity on what e-waste is and how to dispose of it appropriately. Advertise appropriate drop-off locations, take-back facilities etc.	OWE
Medium Term Actions (within next 5yrs)			
Hierarchy	**Action**	**Detail**	
RECOVERY	Innovative E-waste Technology	Investigate opportunities to implement and/or endorse advanced e-waste recovery technologies within the municipality.	SO

Acronym Breakdown

SO	Sustainability Officer	OWE	Officer Waste Education
CMW	Contract Manager Waste	F&ET	Festival & Events Team

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8.2.5 Hard Waste

Hard Waste

What is it:

Hard waste typically describes waste that is either too large to be disposed of through standard bins (such as furniture) or has specific disposal requirements. This includes bulky items such as old or broken furniture, fridges, washing machines, mattresses, and household items.

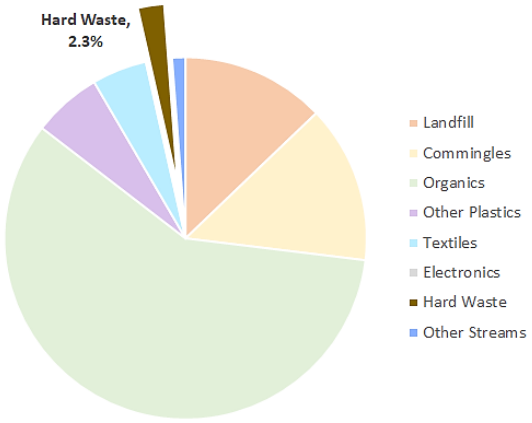
Examples:

Furniture (Tables, Chairs, Shelving, Couches)
Mattresses and Bed Frames
Bicycles
Fridges
Broken kitchen Appliances
Television sets
Large Toys
Tools
Garden Equipment

Current Issues:

While Council provide a free hard waste collection service to residents, lack of awareness about the service, or perceived inconvenience of arranging a collection can lead to illegal dumping, where residents dump items in the public area. Illegal dumping of waste causes health and safety risks for both people and the natural environment.

Due to the mixed nature of items categorised as hard waste, it is also difficult to separate and recycle useful components of this waste stream. Steel and mattresses are easier to recover, whereas composite materials, or poorly manufactured furniture do not currently have high value, and are therefore difficult to recycle.



Current Performance:

Council offer a free booked annual hard and green waste collection service for residents, and collect approximately 1200 tonnes of hard waste each year.

Residents of registered multi-unit dwellings are offered a monthly or at call service, provided sufficient space is available within the property.

Strategic Actions – Hard Waste

Short Term Actions (within next 3yrs)			
Hierarchy	**Action**	**Detail**	**Who**
REUSE	Reuse Facilities & Workshops	Advocate and support repair/reuse facilities (i.e. repair café, community shed) and workshops with local community organisations.	OWE/ SO
REUSE	Rental Businesses & Reuse Centre	Support programs and facilities that provide reuse and rental services for household goods and appliances, furniture, tools, sports equipment, and party equipment (tables, chairs, serving utensils).	SO/ OWE
REUSE	Buy Back / Tip Shop	Investigate option to provide a buy back/tip shop (i.e. second hand shop) facility where residents can drop-off re-purposeful goods for free conditional). This can also double as a facility for the resale of used goods back to the community.	SO/ CMW
REUSE	Reuse Initiatives	Better promote initiatives for the reuse of hard waste items such as Buy it Back Day, Flea Markets, Garage Sales, Buy Swap Sell Social Media Groups and Clothing Swaps.	OWE
REUSE	Reuse Workshops and Education Events	Include repair and reuse workshops in the Sustainable Living program which help residents to avoid waste and disposal of items.	SO
Medium Term Actions (within next 5yrs)			
Hierarchy	**Action**	**Detail**	
RECYCLING	Student Accommodation Move In/Move out Services	Investigate option to develop and provide tailored hard waste collection services to student accommodation and boarding facilities that repeatedly have high turnover of occupants on an annual basis, resulting in surplus quantities of charity and hard waste. Similar service could potentially be tailored to high rise apartment buildings.	OWE/ CMW

Acronym Breakdown

SO	Sustainability Officer	OWE	Officer Waste Education
CMW	Contract Manager Waste	F&ET	Festival & Events Team

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8.2.7 Litter

Litter

What is it:

Litter refers to items of rubbish that have been left in public areas, such as in parks or public streets. These items can be intentionally left, or may occur as a result of overflowing bins or animal interference.

Items of litter find their way into storm water drains and waterways during rainfall events, and therefore will often ultimately wash out to sea.

Examples:

Empty bottles and cans
Cigarette butts
Plastic wrappers
Fast food containers
Plastic bags
Dog waste
Plastic bottles
Balloons
Chewing gum wrappers
Broken glass
Bottle caps

Current Issues:

Litter poses a significant and growing risk to both human and environmental health. Litter dropped in streets, along the side of the road can be washed or blown into creeks and rivers, polluting land, waterways and ocean environments. It is also the cause of great harm and suffering to the animals that ingest littered items or become entangled in them.

Litter not only pollutes our environment but it also diminishes our enjoyment and value of public places by making our city appear dirty and uncared for.

Cigarette butts and plastic items are among some of the most common and high risk forms of litter. Approximately 20 million cigarette butts are littered in Australia every day, and based on current projections, it has been estimated that there will be more plastic in the ocean than fish by the year 2050.

Current Performance:

Council provide cleansing services including street sweeping, provision and management of public place general and recycling bins, ongoing monitoring of litter hotspots, and dumped rubbish investigation and enforcement as part of their City Amenity and waste management service.

Council also facilitate and promote clean up events for the community, and monitor a number of litter traps, tree pits and gross pollutant traps throughout the municipality.

Strategic Actions – Litter

Short Term Actions (within next 3yrs)			
Hierarchy	**Action**	**Detail**	**Who**
AVOIDANCE	Anti-litter education campaign and bin wraps and signage	Expand the use of anti-litter bin wraps and signage in public areas to discourage littering and promote responsible care for the environment in parks and open spaces.	OWE
AVOIDANCE	Review and expand the location of public place bins	Review current location and service levels of public bins and develop a Policy and Strategy to install bins in high use places, including waterfront locations to reduce the incidence of litter.	SO/ CMW
AVOIDANCE	Investigate Solar compacting bins	Investigate suitable locations to install solar compacting bins, such as high use parks and public spaces, to reduce the incidence of overflow and litter.	SO/ CMW
AVOIDANCE	Investigate litter prevention aids and bin designs	Investigate options to install litter prevention aids along waterways, such as barriers, litter traps and new bin designs which prevent overflow and animal-interference.	SO/ CMW
REUSE	Promote reusable containers to help avoid commonly littered items	Advocate and promote the use of reusable and refillable items to help reduce the incidence of litter such as empty bottles, and promote public water stations to refill bottles.	OWE
RECYCLING	Increase number of public place recycling bins	Install public place recycling bins in all high-use parks and public areas to increase the capture and diversion of recyclable products.	CMW/ SO
RECYCLING	Support local clean up groups	Investigate options to support local clean up groups through an adopt-a-street program.	OWE
Medium Term Actions (within next 5yrs)			
Hierarchy	**Action**	**Detail**	
AVOIDANCE	Expand use and location of litter traps	Investigate litter hotspots and appropriate locations to install litter traps to prevent storm water pollution and collect data on types and quantities of materials collected.	SO

Acronym Breakdown

SO	Sustainability Officer	OWE	Officer Waste Education
CMW	Contract Manager Waste	F&ET	Festival & Events Team

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8.2.8 Other Streams

Other Streams

What is it:

Other waste streams refer to items that are not typically recycled by municipal collection services but still have the ability to be processed or repurposed as a separate stream. These include items tend to be in smaller quantities by weight such as polystyrene, batteries, ceramics and nappies.

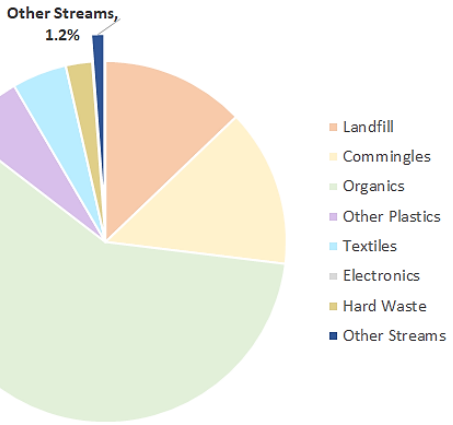
Examples:

Polystyrene (EPS)
Batteries
Cooking Oil
Engine Oil
Coffee Pods
Ceramics / Crockery / Pyrex
Nappies
Light bulbs
CDs and DVDs
Corks
Paint
Tyres

Current Issues:

While these waste streams can often be easily identified, they are not always as easily disposed of. Furthermore, the available information on how to appropriately recycle these items can often be confusing and inconsistent.

Commercial industries are currently high performing in the separation and recycling of these streams as it is easier to separate at source and typically deals with higher volumes and regular turnover. The challenge is how we can improve the separation of these waste stream at a domestic level where volumes are low and infrequent.



Current Performance:

Al the items listed above can be taken to transfer stations except for coffee pods. Neighbouring transfer stations. Both the Moonee Valley and Citywide transfer stations are within a few kilometres of the City of Maribyrnong.

Use of the transfer stations by City of Maribyrnong residents is unknown.

Strategic Actions – Other Streams

Short Term Actions (within next 3yrs)			
Hierarchy	**Action**	**Detail**	**Who**
AVOIDANCE	Ban/Promote Alternatives to Disposable Coffee Pods	Adopt a policy that bans coffee pods from council-run buildings/events; promote the use of refillable coffee pods and the recycling of aluminium coffee pods.	SO/ OWE
AVOIDANCE	Cloth nappy rebate program	Investigate option to provide a rebate to residents who purchase cloth/reusable nappies and sanitary items.	SO
REUSE	Promote Alternatives	Promote the use of alternative products to in replacement. For example, reusable cloth nappies, reusable crate packaging for food/goods, etc.	SO/ OWE
REUSE	Reuse Cupboard	Encourage storing of unwanted office supplies for re-use by community members	OWE
RECYCLING	Center for Hard to Recycle Materials	Establish and promote collection hubs in the community for hard to recycle items, e.g. batteries, pharmaceuticals, CDs and DVDs, light bulbs etc. Encourage management of collected items by manufacturers or retailers.	SO/ OWE/ CMW
RECOVERY	Reuse Policy	Adopt policy for Council to reuse material content such as glass fines in public infrastructure and construction works.	SO
RECOVERY	Home Detox	Facilitate programs that provide for the safe disposal and recovery of highly toxic, unwanted household chemicals such as solvents, poisons, and cleaning products via collection facilities and campaigns.	SO/ OWE
Medium Term Actions (within next 5yrs)			
Hierarchy	**Action**	**Detail**	
AVOIDANCE	Promote alternative products as these become available	Monitor development of alternative products and continue to promote these to the community. Investigate opportunities to subsidise alternative products where possible.	SO/ OWE
RECYCLING	Center for Unique Waste Stream Recycling	Investigate option to establish a facility where residents can drop-off difficult to recycle products such as hazardous waste, medical waste, oil, anti-freeze, paint, tyres, pharmaceuticals, etc.	SO/ CMW
RECOVERY	Polystyrene Melter	Investigate opportunities for Council to implement polystyrene melter in combination with polystyrene collection hub.	SO

Acronym Breakdown

SO	Sustainability Officer	OWE	Officer Waste Education
CMW	Contract Manager Waste	F&ET	Festival & Events Team

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8.3 Commercial

Strategic Actions – Commercial			
Short Term Actions (within next 3yrs)			
Hierarchy	**Action**	**Detail**	**Who**
AVOIDANCE	Packaging education	Undertake education program for traders on avoiding excess packaging.	OWE
		Work with Traders to have a 'Packaging free" precinct where carry bags are not offered. 'Boomerang Bags' would be available instead.	OWE
AVOIDANCE	Food Organics Reduction	Undertake education program for traders on avoiding excess food organics waste. Including shelf life and ordering.	OWE
REUSE	Food Organics Sharing	Work with traders and charity partners to establish 'second-bite' program for excess usable food within municipality.	SO
RECYCLING	Trader Recycling Hubs	Investigate option to establish trader recycling hubs for food organics and commingled Example: Degraves Precinct City of Melbourne.	SO/ CMW

Acronym Breakdown

SO	Sustainability Officer	OWE	Officer Waste Education
CMW	Contract Manager Waste	F&ET	Festival & Events Team

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8.4 Public realm and construction materials

Two of the Goals in section 6 included the City of Maribyrnong leading by example and using recycled content in both construction contracts and as assets in the public realm.

Council construction contracts to increase requirement for recycled content target 25% recycled content by 2022.
Council assets to increase requirement for recycled content by 25% by 2022.

Consideration for the reuse of recycled materials within public infrastructure and services, including but not limited to:

▪ **Plastic** ▪ **Tyres** ▪ **Glass** ▪ **Bitumen**	▪ **Concrete** ▪ **Rubber** ▪ **Timber**

Figure 15 **Examples of recycled materials in Construction and Public Realm**

Recycled Plastic Furtiture - Photos from Replas

Recycled Rubber Roundabout - Photo from Traffic Products Australia

8.5 Council Policy Action Plan

Hierarchy	Landfill Diversion Strategies	Description
INFRASTRUCTURE & SERVICES		
AVOIDANCE	Pay-To-Landfill	Investigate options to adopt a weight-based fee structure for residual waste in the landfill bin. This encourages residents to avoid excessive waste generation.
RECYCLING	Kerbside Collection Optimisation	Investigate options to optimise or encourage greater diversion from landfill by enhancing municipal kerbside recycling services, e.g. offer free increased recycling bin capacity.
RECYCLING		Review collection frequencies of all kerbside bins as material moves from landfill bin into alternate bins or drop off locations.
EDUCATION & ENGAGEMENT		
AVOIDANCE	Website Content - Green Products & Services Directory	Develop or facilitate an online local/regional directory of specific businesses and industry sectors that offer sustainable ("green") products or services, including vendor contact information.
AVOIDANCE	Waste Education Strategy	Facilitate educational/marketing tools and programs to promote best practice social/behavioural changes to encourage residents and businesses to reduce, reuse, recycle and compost.
AVOIDANCE	Zero Waste Venues & Events	Adopt and implement zero waste goals and action plans to encourage public and private venues and events. Provide information and assistance to venue and event coordinators, including examples of displays and appropriate signage.
AVOIDANCE	Sustainable Business Program	Develop a towards zero waste tool for businesses and promote and/or reward participating businesses. i.e. Green Star rating concept but on a local/precinct scale. Example: City of Stonnington – Green Businesses Program
ENFORCEMENT		
AVOIDANCE	Registration of Private Waste Contractors	Develop a register of all private waste collection contractors that service the municipality. Request biannual data reports to enable improved tracking of waste quantities and movement to enable development of actions to address private waste collections.
AVOIDANCE	Service Provider Training	Develop a service provider training program to report recycling and organic contamination and excessive landfill volumes presented to reduce landfill and maximise recycling.
PLANNING		
AVOIDANCE	Planning Scheme Requirement	Introduce waste and recycling requirement into Section 22 of the Maribyrnong Planning Scheme including requirements for Waste Management Plan (WMP) similar to Sustainability Management Plan (SMP) requirement.

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Hierarchy	Landfill Diversion Strategies	Description
ADVOCACY		
AVOIDANCE	Fees on disposable Items	Advocate government programs that place a fee on the sale of certain disposable items, such as disposable shopping bags.
AVOIDANCE	Sustainable Procurement Policy for Businesses	Develop a procurement policy template for businesses to reduce consumption and encourage purchasing of sustainable goods and equipment.
AVOIDANCE	Product and Packaging Redesign	Promote the use of sustainable packaging campaigns to local businesses to reduce or eliminate non-reusable packaging, transport containers, and service-ware from their operations and retail stock. Examples: Closed Loop, Review-Audit-Redesign.
AVOIDANCE	Lead by Example - Zero Waste Procurement	Incorporate Zero Waste objectives into Council contractual purchases and services, e.g. avoiding purchase of disposable goods, minimal waste in product and packaging design, product take-back services, and lifecycle analysis.
AVOIDANCE	Landfill Ban - Organics	Promote the diversion of organics from landfill. Advocate for government policy relating to food organics ban from landfill.
DATA & REVIEW		
AVOIDANCE	Waste Audits	Undertake annual waste audits to continually track waste composition.
AVOIDANCE	Analysis of Audit Result	Prepare strategic actions to address waste audit results in particular waste going to landfill.

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9. Evaluation & Review

It is the responsibility of the organisation for ongoing review of this Strategy and related documentation.

Length of relevance: 4 years

Responsible Department: Infrastructure Services

Refer to Appendix A for further details.

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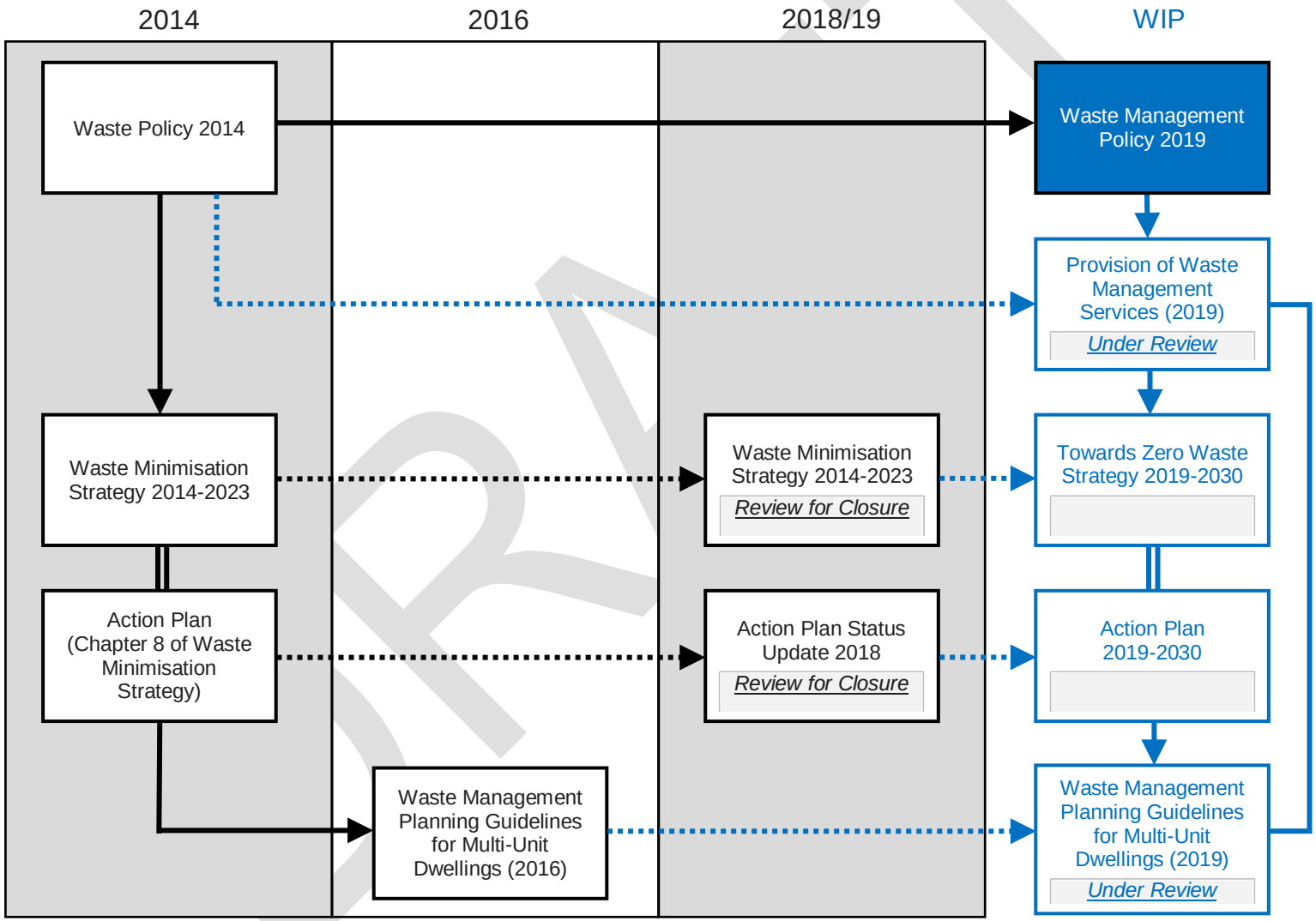
Appendix A Waste Documentation History

The below flowchart provides a summary of waste related documentation that has been adopted by Council in the last 5 years, and the current status of the documentation at the time at which this policy was published.



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Appendix B Waste Hierarchy

A definition of each waste management hierarchy outcome is outlined as follows:

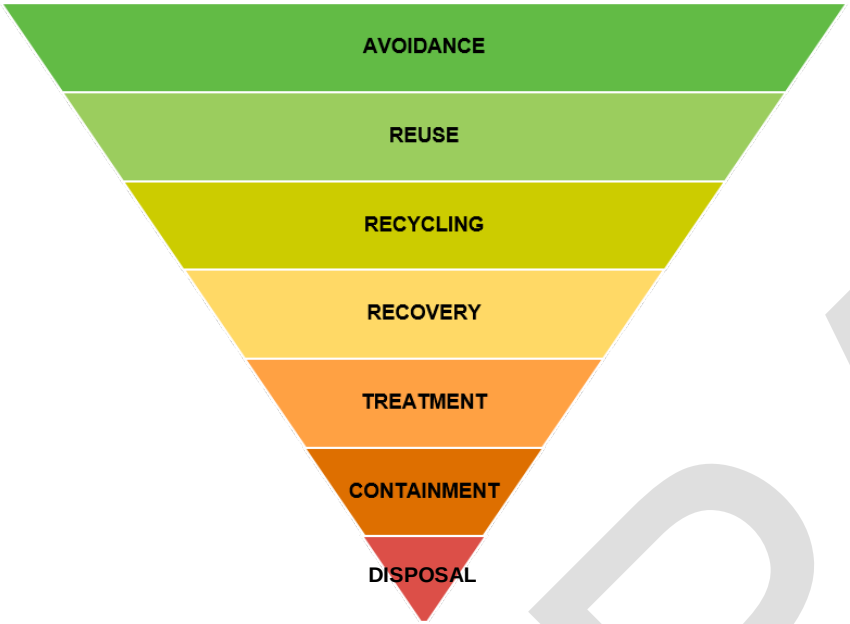

Figure 16 EPA Victoria Waste Management Hierarchy

- **Avoidance** - Preventing or minimising waste with the purpose of driving resource efficiency. This is the preferred option in the waste management hierarchy.
- **Reuse** - Using a material again in its original form for the same or a different purpose without further processing.
- **Recycling** - A collection of processes for turning recovered materials (including organic matter) that would otherwise be disposed of as wastes into new materials or products.
- **Recovery** - The process of extracting materials or recovering energy value from the waste stream. The reclaimed output (e.g. methane gas) of the recovery process is used as an input for other material system (e.g. energy generation)
- **Treatment** - A series of operations intended to reduce waste volumes, change waste composition or remove hazardous elements from waste stream for its safe disposal
- **Containment** - Methods or physical structures designed to prevent the dispersion of hazardous substances (e.g. asbestos) into the environment.
- **Disposal** - Final placement of waste in an appropriate site without the intention of retrieval. Disposal is the least preferred option in the waste management hierarchy.

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Appendix C Glossary

Word / Phrase	Definition
Biodegradable	Refers to products with accelerated degradation due to additive or organic base components. Note: the terms biodegradable and compostable are not synonymous. Not all biodegradable products fully decompose in the environment.
Collection	The emptying of receptacles of waste from a designated space, and the subsequent transportation and disposal of that waste.
Collection Contractor	A hired service to collect waste.
Commingled Recycling	Recyclables that are mixed together in the collection truck, instead of being sorted by individuals (e.g. paper, cardboard, plastic bottles, metal cans etc.).
Compostable	Ability of a material to completely decompose within a composting cycle. Compostable products are made of plant starch that returns to base organic components when adequately composed.
Composting	The controlled process whereby organic materials are pasteurised and microbiologically transformed under specific thermal and oxygen conditions to produce a final nutrient-rich product: compost
Construction and Demolition Waste (C&D)	Refers to the waste that arises from activities linked to residential and commercial construction, demolition or refurbishment of infrastructure.
Contamination	Inappropriate or unwanted waste material located in a bin (e.g. garbage placed in a recycling bin).
Decompose	Refers to the process whereby organic matter is broken down into smaller organic components, eventually returning nutrients to the soil.
Degradable	Capable of breaking down into smaller pieces. The term degradable and biodegradable are often used interchangeable. However, neither of these terms necessarily mean a material is compostable. See compostable.
Drop-off Centre	Waste collection facility for the temporarily holding of specific waste types (e.g. e-waste drop-off points/centres)
Flexible (or Soft) Plastics	Type of plastic that can be easily scrunched into a compact mass and does not return to its original shape.
Garbage (General Waste)	Materials not able to be recycled, reused or composted.
Hard Waste	Waste that is either too large to be disposed of through standard bins (such as furniture) or has specific disposal requirements.
Leachate	A liquid that has percolated through a solid and/or been generated as a by-product of the decomposition of waste material.
Medical / Prescribed Waste	Potentially infectious waste materials generated from health care activities. Includes hospitals, clinics and first aid rooms (e.g. needles-sharps, gloves, bandages).
Municipal Solid Waste	Any solid waste generated from commercial and/ or residential activities that is collected by, or on behalf of a municipal council, but does not include any industrial waste
Receptacles	A container (waste bin) for temporarily storing of waste.
Recycling Rate	The proportion of materials recycled as a percentage of total waste.
Reuse	Materials that are recovered to be reused in current form: e.g. cardboard boxes reused in art programs.
Recyclables	Materials that are recovered and converted into reusable materials. These include the following streams:
Paper	Waste from paper based items (e.g. unwanted print outs, used notepads, etc.).
Cardboard	Waste from cardboard based items (e.g. stationary packaging, toilet rolls, food packaging, etc.).
E-waste	Electronic or electrical equipment (typically has a power supply or contains batteries).

Word / Phrase	Definition
Garden Waste	Residual organic material from a typical garden/lawn (e.g. leaves, sticks, branches, grass clippings).
Food Waste	Residual organic material from food scraps (e.g. banana peel, apple core, eggshells, leftovers, etc.).
Organic Waste	Waste composed of food waste and garden waste.
Rigid Plastics	Hard or flexible plastic that when squashed or crunched tries to return back into its original shape.
Secure Paper	Unwanted paper for shredding or recycling containing information that the user may not want to disclose.
Transfer Station	A depot for the reception and aggregation of waste streams prior to their transport to a processing facility for additional sorting, recycling or disposal.
Waste	Any item which is discarded after use.
Waste and Resource Recovery Education	Any program, activity, project, or strategy that seeks to increase awareness of appropriate waste handling and strengthen Maribyrnong's waste and resource recovery.
Waste Generation Rates	The measurement of waste generated from a particular source. Typically measured in volumes or weight against time e.g. litres per resident per week (L/resident/week).
Waste Management Plan	A document detailing the waste management operations of a site (including details such as storage provisions, collection arrangements and appropriate material separation.
Waste Hierarchy	The order of priorities for the efficient use of resources and waste minimisation.

Appendix D Government Strategies

The Toward Zero Waste Strategy 2019-2030 has been developed in the context of Federal, State and Local Government Plans, Policies and Regulations for waste management and resource recovery, including:

- Maribyrnong City Council Plan 2017-2021
- Maribyrnong Council Waste Management Policy 2019
- Metropolitan Waste and Resource Recovery Implementation Plan 2016
  Key strategic objectives to:
    - Reduce waste sent to landfill
    - Increase organic waste recovery
    - Deliver community, environmental and economic benefits
    - Plan for Melbourne's growing population.
- Statewide Waste and Resource Recovery Infrastructure Plan 2017-46
- Environmental Protection Act 1970
- Department of Environment, Land, Water and Planning's Recycling Industry Strategic Plan
- Getting Full Value: the Victorian Waste Policy;
- Local Government Act 1989

The Strategy shall be read in conjunction with the following Council **Waste** documentation:

- Council Waste Management Policy 2019
- Council Provision of Waste Management Services 2019
- Council Waste Management Planning Guidelines for Multi-unit Dwellings.2019

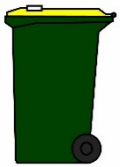
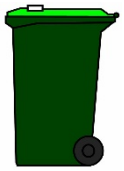
Appendix E Waste Management Services 2019-2020

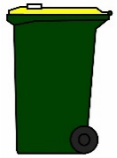
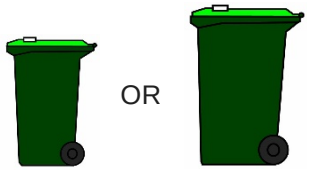
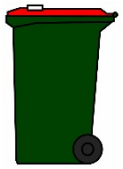
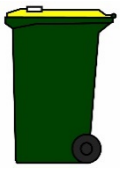
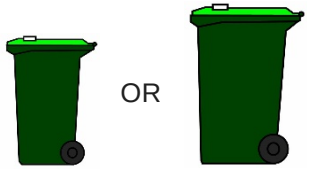
The following table provides a summary of the current waste management service provisions for different property/development types within the municipality of Maribyrnong. Waste management services provided by the City of Maribyrnong are subject to change. The following section details services as of 2019-2020 financial year.

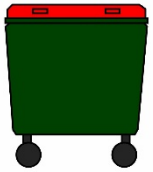
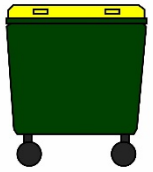
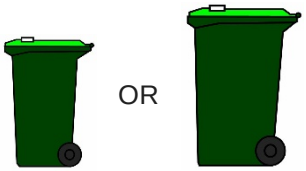
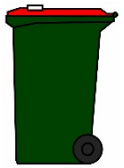
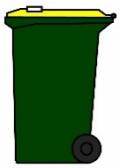
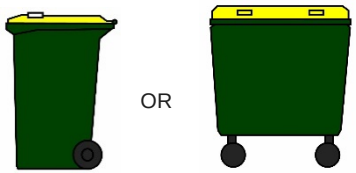
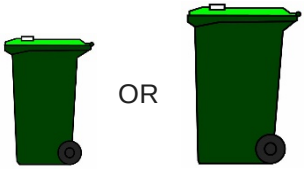
These services are for various property types with approved council collections. Developments with private collections are not eligible for these services.

Request for additional bins per stream on top of the service entitlement are not encouraged. Additional bins can be provided at cost on a case-by-case basis only. Overflowing bins and excessive volumes may not be collected. Excessive quantities of hard waste will not be collected; an addition call collection service that will attract an additional fee can be arranged to collect excess volumes, if required.

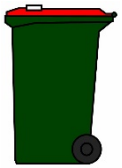
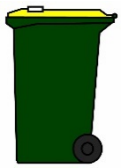
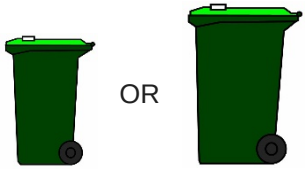
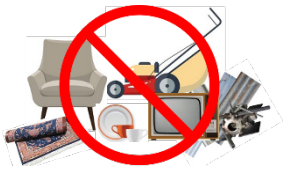
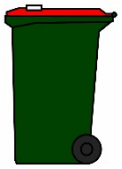
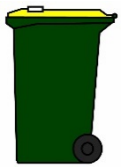
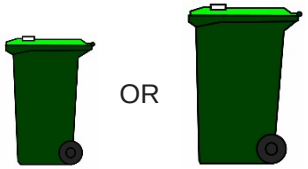
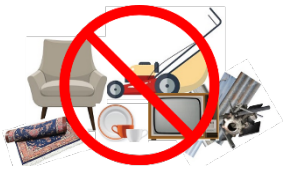
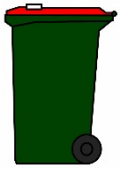
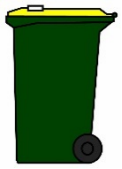
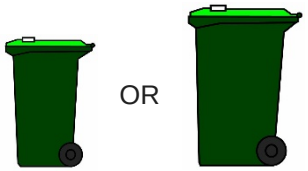
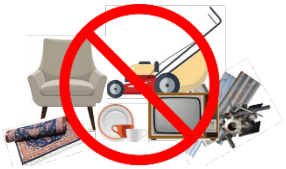
Table 4 Waste Service Provision

Property / Development Type	Waste Stream Services			
	General Waste (Garbage)	**Commingled Recycling**	**Green (Garden) Waste *(Optional User Pays Service)***	**Hard Waste & Green (Garden) Waste *(Booked Service)***
Single Detached Houses	1x 120L bin Weekly Collection 	1x 240L bin Fortnightly Collection 	Optional 1x 240L <u>OR</u> 1x 120L bin Fortnightly Collection  OR 	2m3 Hard Waste + 4m3 Green Waste One Annual Collection Fee for Additional Collections  +

Property / Development Type	Waste Stream Services			
	General Waste (Garbage)	**Commingled Recycling**	**Green (Garden) Waste *(Optional User Pays Service)***	**Hard Waste & Green (Garden) Waste *(Booked Service)***
Multi-Unit Dwellings 1-4 Dwellings	1x 120L bin per dwelling Weekly Collection 	1x 240L bin per dwelling Fortnightly Collection 	Optional 1x 240L <u>OR</u> 1x 120L bin per dwelling Fortnightly Collection  	2m3 Hard Waste + 4m3 Green Waste per dwelling One Annual Collection Fee for Additional Collections 
Multi-Unit Dwellings 5-9 Dwellings	1x 240L Bin shared between 2 Dwellings Weekly Collection 	1x 240L bin shared between 2 Dwellings Fortnightly Collection 	Optional 120L <u>OR</u> 240L bins as requested by building management. Fortnightly Collection  	$2m^3$ Hard Waste + $4m^3$ Green Waste per dwelling One Annual Collection Fee for Additional Collections 

Property / Development Type	Waste Stream Services			
	General Waste (Garbage)	**Commingled Recycling**	**Green (Garden) Waste *(Optional User Pays Service)***	**Hard Waste & Green (Garden) Waste *(Booked Service)***
Multi-Unit Dwellings **10 or more Dwellings***	Shared 1100L bins as appropriate Weekly Collection 	Shared 1100L bins as appropriate Weekly Collection 	Optional 120L or 240L bins as requested by building management Fortnightly Collection 	Minimum 6m^3 shared hard waste area Maximum monthly collection coordinated with Council 
Commercial **Small Business**	1x 240L bin Weekly Collection 	1x 240L bin Fortnightly Collection 	Service not available 	Service not available 
Kindergartens & Schools inclusive of Prep-Yr12 (Public & Private)	Service not available 	1x 240L bin per 60 students <u>OR</u> equivalent capacity in 1100L bins Weekly Collection 	Optional 1x 240L OR 1x 120L bin Fortnightly Collection 	Service not available 

**660L bins will be considered for multi-unit residential developments with 10 or more dwellings where 1100L bins are not safe or fit for purpose on a case by case basis.*

Property / Development Type	Waste Stream Services			
	General Waste (Garbage)	**Commingled Recycling**	**Green (Garden) Waste *(Optional User Pays Service)***	**Hard Waste & Green (Garden) Waste *(Booked Service)***
Sporting Facilities Small 1 sports ground on-site; Single club tenant; 2 or less teams	2x 240L bins Weekly Collection 	3x 240L bins Fortnightly Collection 	Optional 1x 240L OR 1x 120L bin Fortnightly Collection 	Service not available 
Sporting Facilities Medium 1 sport ground on-site; Single club tenant; Tenant has 3-5 teams	3x 240L bins Weekly Collection 	4x 240L bins Fortnightly Collection 	Optional 1x 240L OR 1x 120L bin Fortnightly Collection 	Service not available 
Sporting Facilities Large More than 1 sports ground on-site; Multiple club tenancy; More than 5 teams	4x 240L bins Weekly Collection 	6x 240L bins Fortnightly Collection 	Optional 1x 240L OR 1x 120L bin Fortnightly Collection 	Service not available 

Maribyrnong
CITY COUNCIL

Towards Zero Waste Strategy
2019 to 2030