

Don't Waste It!

Draft Waste Management Strategy
2018-28



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Womin Jeka

Council respectfully acknowledges the Yalukut Weelam Clan of the Boon Wurrung. We pay respects to their Elders past, present and future. We acknowledge and uphold their continuing relationship to this land.

Mayor's Message

The Councillors and I are pleased to release a draft of the Don't Waste It! *Waste Management Strategy 2018-2028*.

The Port Phillip community has told Council that it wants to be a leader in waste reduction and recycling, and it wants to see new solutions to how we manage waste. This strategy sets out clear targets for waste and how we will achieve these. It is a call to action for our community to work together to manage waste better over the next four years, whilst we investigate new advanced waste management opportunities to achieve even better outcomes in the future.

- This strategy will manage the waste challenges of our increasing population with more people living in apartments, ensuring we help people to recycle more and keep our City clean.
- With significant changes currently occurring in both the recycling and landfill management industries, this strategy will ensure our waste services are maintained to their current high standard and we can keep costs down through service efficiencies and partnerships;
- The big changes outlined within this strategy will help us as a City become a leader in waste management within metropolitan Melbourne, by achieving improved rates and standards of waste reduction and recycling.

We are excited to present this draft and we welcome your feedback.

Why we need this strategy

We have smart solutions for a sustainable future.

Strategic Direction 3, 2017-2027 Council Plan

This *Don't Waste It Strategy* provides the blueprint for how Council and the community will work together to create a more sustainable future for Port Phillip, through the way we manage our waste.

The Council Plan 2017-2027 makes a specific commitment to achieving a *sustainable reduction in waste*.

We will need to do this through:

- Reducing the amount of waste we create
- Reusing and recycling as much as possible
- Treating what is left over in the most sustainable way.

Council, residents, businesses and visitors all have a role to play, by working together we can manage our waste better now, whilst we create new ways of managing waste in the future.

MANAGING THE NOW: this strategy sets clear priorities and targets for the first four years – 2018 to 2022. These priorities will be supported by a set of actions with committed funding. We also have defined measures so that we can keep track of how we are achieving our targets.

CREATING THE NEW: identifying more ambitious potential targets for the longer term, 2022 to 2028, are also part of this strategy. We will investigate, plan and inform ourselves better on the right waste treatment solution for our City in order to create better ways of managing waste in the future.

The way we manage waste today will not serve us well into the future. This strategy responds to both the challenges and opportunities presented by our rapidly growing City and the significant changes taking place in the waste industry.

We currently produce more waste, and recycle less than the average Metropolitan Melbourne household – and we need to turn this around. As more people live, work and visit the City, we will need to make changes so that we don't also see a rise in waste, litter and dumped rubbish on our streets. We also need to prevent our waste going to landfill which impacts significantly on the environment.

With industry wide changes the future cost of waste services, including both landfill and recycling, is set to increase. We can work to keep costs down by ensuring our services are efficient, and by looking to share facilities and services with our neighbours. The recycling industry is facing export restrictions meaning now more than ever we need to 'clean up' our waste, get it in the right bin and find new ways to process it locally.

You have told us how passionate and committed you are about waste and recycling, and want sustainable solutions for disposing of food and garden waste.

While we need to focus on the big infrastructure solutions for the long term, there are also changes we can all make now. We must work collaboratively as a community to achieve four priority outcomes and become:

- A City that reduces waste
- A City that maximises reuse and recycling
- A City with clean streets, public spaces and foreshore areas
- A City that uses new technology to process waste better and reduce environmental impacts.

Our Challenges

The City of Port Phillip faces several long-term challenges that have been identified in the *Council Plan 2017-27*. In particular, these challenges provide us with the opportunity to think differently about how we respond to the pressures from urban development and growth, and how we can use advances in technology to manage our waste in a more sustainable way and to protect the amenity of our City.

The challenges identified in the Council Plan each have an impact on this strategy.

Climate Change

Waste that gets sent to landfill is usually compacted and covered. This helps break down food scraps, garden waste and other organic matter, but releases methane, a potent greenhouse gas, in the process. The implications for global warming and climate change are significant. Organic waste buried in landfill also breaks down at a very slow rate and remains a problem for future generations.

Home composting reduces this impact on climate change, and also reduces environmental impact of transporting organic waste to landfill.

Population Growth

Our City's resident population is projected to increase 23% by 2027 and almost double by 2050. We can also expect more people to be visiting our beaches, parks and shopping strips. More people will mean more waste unless we make real changes to the way we consume, deal with our waste in our households and business, and management waste treatment as a Council.

Urbanisation

Port Phillip's is Melbourne's most densely populated council area, with a rapid increase in the number of residents in apartments and units.

This presents a unique set of challenges that contribute to lower recycling rates and waste dumping, including:

- Traffic congestion and access constraints for collection services, and limited space for bins
- Apartment buildings that have not been designed to make it easy for residents to recycle
- A high percentage of renters and people that move often

New higher density developments, particularly at Fishermans Bend present the opportunity to design better ways to manage domestic recycling and waste.

Rapid evolution of technology

New technology, including advanced waste treatment is evolving rapidly, and is key to increasing recycling and reducing the impacts of waste on the environment. New government 'waste to energy' programs can help Council implement new ideas for waste.

Our existing depot and transfer station facilities need to be upgraded if we are to significantly improve the way we deliver waste services. Their location within the Fishermans Bend renewal area means these facilities are now close to residential developments and the noise of the 24-hour depot service centre creates the need to consider relocating these facilities.

Legislative and policy influences

Relying on landfill to dispose of most of our waste has become an unsustainable option. The Victorian Government does not support building new landfill facilities. Its current policy is to support advanced waste treatments, including new technologies that convert waste to energy (see the forthcoming Victorian Government's Waste to Energy strategy).

There are currently 4 landfills operating in Melbourne, and half are set to close over the next couple of decades. Combined with increases in waste due to our population boom, the price of taking waste to landfills is set to dramatically increase.

The capping of rates means there is an increased strain on Council's financial resources. Port Phillip doesn't currently charge a fee for waste services. As a community, we will have to find new ways to pay for service and infrastructure improvements in waste management, and to maintain our much-loved neighbourhoods and places.

Changing economic conditions

For many years the recycling industry has relied on the export of recycled materials to China for sorting and reuse, including most plastics and paper. China has recently announced greater restrictions on the importation of waste and recycling, effectively reducing the amount of recycling we can export. The local recycling industry is under pressure and the cost of recycling services will likely increase in the future. For many Councils, this pressure has resulted in a change from receiving money for recycled materials, to having to now pay for recycling services.

This provides an opportunity for us to improve our own waste and recycling industry, and for the City to support smarter, more local solutions.

Where we are now

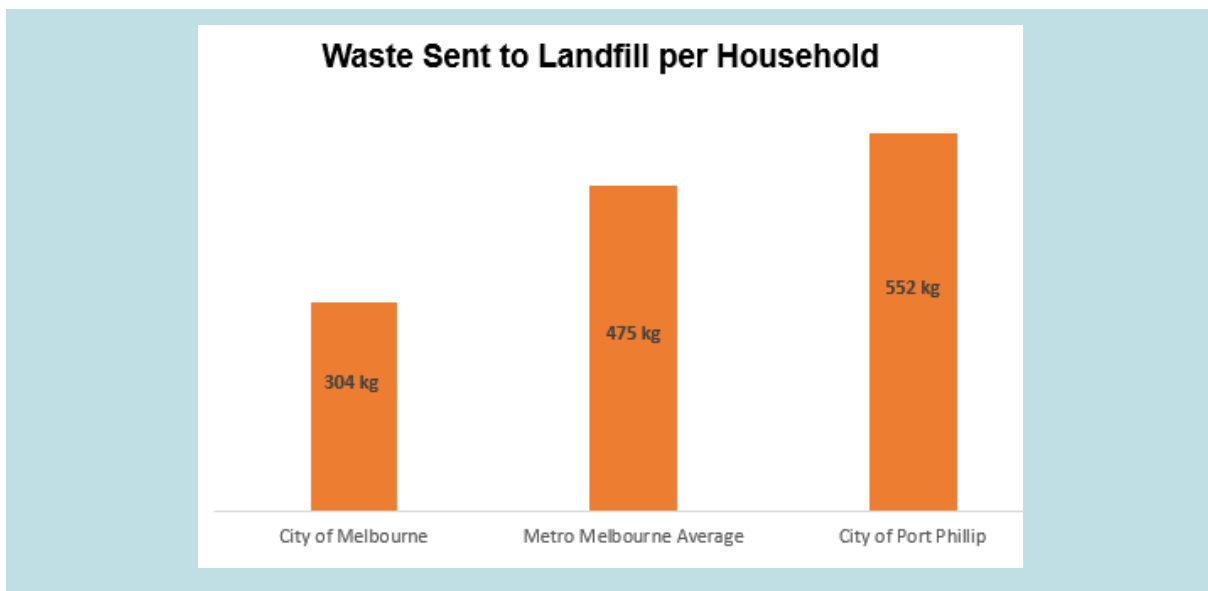
We have one of the best hard rubbish/dumped waste recycling rates in Victoria.

We reuse and recycle 70% of all waste collected, which compares well against the Victorian average of only 15%*.

Image to be inserted recycling rates comparison

We produce more waste than the average Melbourne household

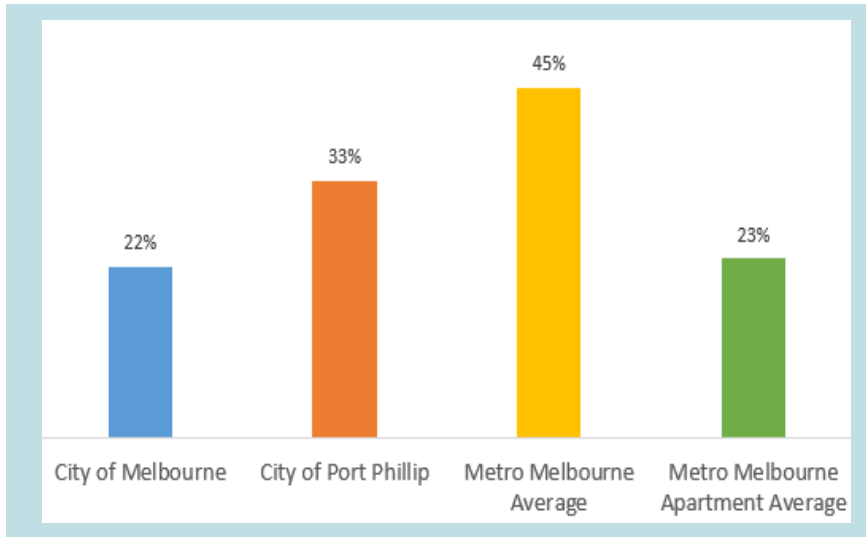
Each year, the average household in Port Phillip produce 552kg of waste which ends up in landfill. This is 14% higher than the Melbourne metropolitan average.



Data Sourced: Sustainability Victoria 2015/16

We recycle less waste compared to other Councils

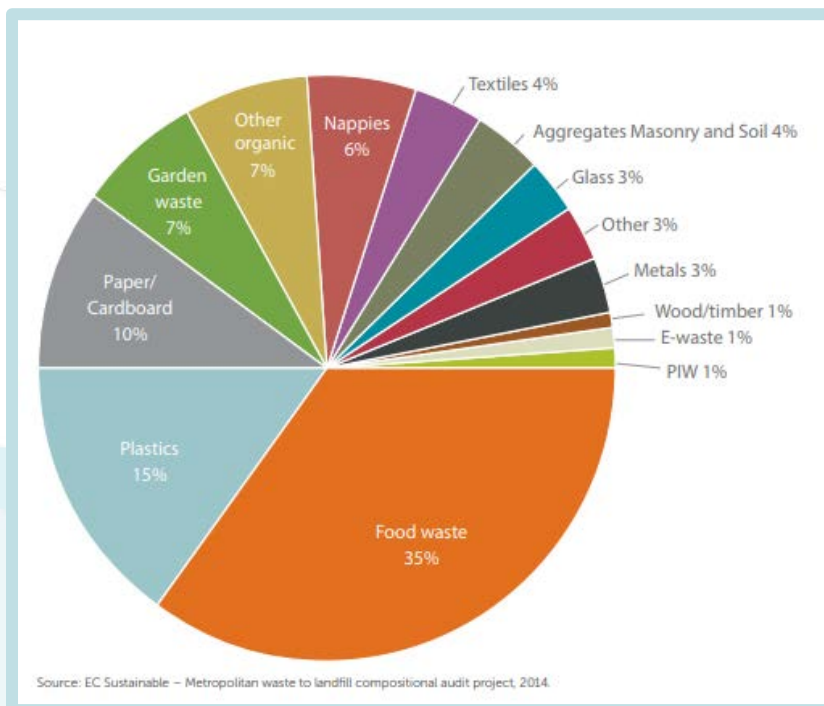
Whilst our current recycling rates are lower than the Metropolitan Melbourne average, this is in large part due to the high number of apartments and suggests where we need to focus our recycling effort.



Data Sourced: Sustainability Victoria 2015/16

We can do better with sorting our recycling

Food waste, plastics and paper account for 60% of all waste which ends up as landfill from Metropolitan Melbourne households (refer Image below). Many of these items could be reused or recycled. The average household throws away over \$2200 worth of food every year which makes up a significant 35% of all waste.



We need to ‘clean up’ our recycling

Council's current kerbside recycling collection service has a contamination rate of almost 9% which is good, but we can do better (Australian average is 15%*). Apartment buildings, however contaminate their recycling bins much more (up to 40%*), which is an opportunity to create real change. We all need to do better to help the recycling industry, and to ensure our recycling can be reused.

Image to be inserted recycling contamination rates comparison

Where our waste currently goes

The diagram below shows where our waste goes now, and where it could go in the future with the use of new technology to contribute to a more sustainable future.

Image to be inserted where waste goes now and into the future

Our current services

<p>Household Kerbside Services</p> <p>Image to come</p>	<p>The City of Port Phillip provides a weekly collection of waste and recycling from each household in the City. Collection is collected via a variety of diesel garbage bins Monday to Friday. Council runs a two-bin collection system (garbage and recycling). There is no third green bin at this point.</p> <p>The majority of the waste collected from the kerbside bins goes to landfill. Currently none of our waste is processed using advanced technologies.</p>
<p>Business Kerbside Services</p> <p>Image to come</p>	<p>Council offers commercial properties the same service as households. They can only access the same size and number of bins as a residential property, and a weekly cardboard collection service for shopping strips. This is inadequate for many businesses, who use private companies to collect and manage their commercial waste and recycling, meaning extra costs and more trucks on the roads.</p>
<p>Hard and Green Waste Collection</p> <p>Image to come</p>	<p>Council provides a hard and green waste booking service (four collections per year for houses, and six for apartments).</p> <p>Hard waste is any larger general household waste that will not fit in a kerbside bin. It includes furniture, mattresses, whitegoods and electronic waste. Green waste includes organic garden matter such as tree pruning's, grass clippings weeds and vines.</p>
<p>Resource Recovery Centre</p> <p>Image to come</p>	<p>The City of Port Phillip Resource Recovery Centre is a drop-off centre and transfer station facility. It accepts waste and recyclables that are then taken to other processing facilities.</p> <p>The Centre performs a crucial role as a place where residents and commercial contractors can deposit recyclable materials (cardboard, glass, steel), green waste and hard rubbish (mattresses, gas bottles, batteries, paint, whitegoods, light bulbs, oil) and e-waste.</p>

<p>Cleaning streets and public spaces</p> <p>Image to come</p>	<p>Council undertakes a wide range of services to ensure our streets, public spaces areas are kept to a high standard. As the number of residents and visitors using our public spaces grows each year, we need to ensure we maintain these standards.</p> <p>Dumped waste has been an ever-increasing issue throughout Port Phillip and Metropolitan Melbourne. The dumped rubbish service of Port Phillip has 2 elements:</p> <ul style="list-style-type: none"> • A reactive service responds to customer requests to investigate and collect dumped rubbish. • A pro-active service is also provided in hot-spot areas. <p>Council officers also conduct regular letter drops and install education/warning signage throughout the city to reduce the occurrence of dumped waste.</p>
<p>Public Bins</p> <p>Image to come</p>	<p>Public litter and recycling bins are located on shopping strips, in parks and on the foreshore. In general, this litter consists of food waste, packaging, animal waste and cigarette butts. All litter from public bins is sent to landfill.</p>
<p>Beach and Foreshore Litter</p> <p>Image to come</p>	<p>Street and beach litter consists mainly of smaller items that are dropped either illegally dropped (cigarettes butts) or naturally/accidentally (leaf litter). It includes plastic and glass containers, paper and plastic bags/wrappings, cigarette butts and animal litter. Currently all litter collected from the beach and foreshore is sent to landfill.</p> <p>Beach cleaning services clean the foreshore mechanically every day over summer. Litter picking crews also collect material from the low tide line to the seawall every day in two shifts.</p>

Listening to our Community

In 2017, Council ran a comprehensive engagement program to invite the community to provide feedback to Council to inform the new Council Plan 2017-2027.

As part of that process, we listened to our residents and businesses, holding focus groups on the future of waste management.

Our community is passionate about the environment and expects Council to lead the City's challenge to reduce waste.

What we've heard

We've heard that our community wants:

- Better recycling outcomes
- A focus on managing waste in and around apartments and units
- Action to reduce the amount of dumped rubbish
- A plan to manage the impacts of population growth on waste
- More information and education from Council to help improve how we recycle
- A way to stop food and garden waste going to landfill

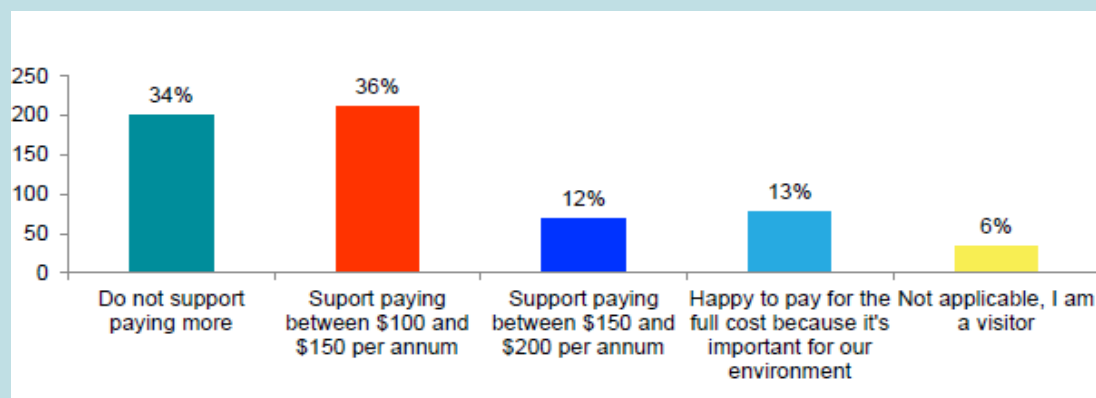
We also heard that the community is willing to pay more for better services that reduce waste to landfill.

These concerns have shaped the development of this strategy that will support us to achieve better waste management together.

We asked

To what extent would you support paying a bit more for other options to reduce the amount of waste going to landfill, including green and organic waste collections?

61% of respondents supported paying more for waste services



Our Partners

To achieve a sustainable reduction in waste, we need to work in partnership with others. Our residential and business communities, state government and agency partners, neighbouring Councils and private industry will all play a critical role in our success.

The importance of partnerships presents both opportunities and challenges for delivering the actions in this strategy. In some cases, we have direct control over actions especially those relating to Council services, whilst in others we act as an enabler but will rely on our community and visitors to do things differently. Some of the most significant changes, particularly investment in new infrastructure, will rely on other levels of government, or forming partnerships with other organisations, if we are to achieve our priority waste outcomes.

Council values the support of our partners in helping us deliver the important initiatives in this strategy, as we recognise we cannot achieve them alone.

Council's partners include:

- Our community – residents and businesses
- Victorian Government and its agencies, particularly Sustainability Victoria and the Metropolitan Waste and Resource Recovery Group
- Inner region and neighboring Councils
- Water authorities, including South East Water and Melbourne Water.

Council's role

- **Trusted service provider and agent:** Providing high quality waste services, infrastructure (e.g. litter bins) and education programs to the community, to achieve our priority outcomes for waste.
- **Trusted partner and broker:** Advocating and building partnerships with State, Federal and other local governments, and the waste industry, to get better outcomes for our community.
- **Trusted steward:** Trialling new ways of delivering services, managing buildings and public spaces, to inspire our community.
- **Monitoring and reporting:** Checking and reporting our progress to ensure we are on track to achieve our goals.

Community's role

Our community has a major role to play in reducing, reusing and recycling waste:

- **Residents** through what they buy, and choose to reuse and recycle.
- **Developers and Body Corporates** through ensuring the design and management of new buildings facilitates maximum recycling, and there is clear access for waste collection services.
- **Businesses** through how they package goods and dispose of waste, particularly food.
- **Visitors** through minimising litter on our streets and foreshore.

Government Partners

The Council exists within a larger government system. Through collaboration and partnerships, we can achieve more managing waste than we can alone. Sustainability Victoria (SV) and the Metropolitan Waste and Resource Recovery Group (MWRRG) are the two major government agencies involved in waste and will be key partners.

- **Sustainability Victoria** is the government agency that supports Victorians through advice and support to be tackle climate change, use our resources wisely, and be more sustainable in our everyday lives.
- The **Metropolitan Waste and Resource Recovery Group** is the government agency that supports Melbourne's metropolitan councils to minimise waste and maximise resource recovery.

Get Involved - Join us in creating smart solutions for a sustainable future. Come along to a workshop, join a local sustainability focused community group, visit the EcoCentre (ecocentre.com) or Council's sustainability website www.sustainableportphillip.com

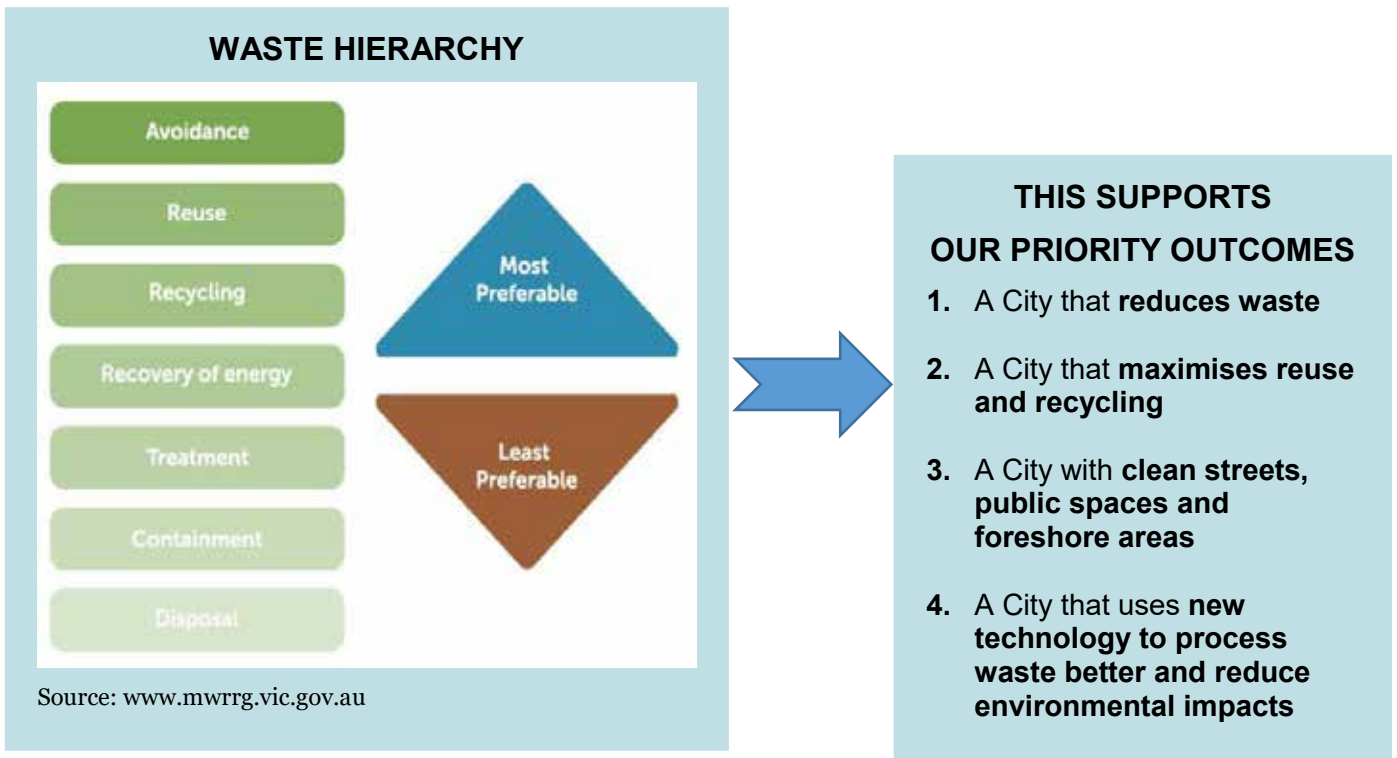
What will be different

Priority Outcome	Where we are now	Where we will be by 2022	Where we could be by 2028
A City that reduces waste	Each household sends 522 kg per year of waste to landfill from their kerbside bin service.	<ul style="list-style-type: none"> 15% reduction in waste per household 15% reduction in waste per council employee 	<ul style="list-style-type: none"> 50% food waste diverted from landfill from households, council buildings
A City that maximises reuse and recycling	Our household recycling rate is 33%	<ul style="list-style-type: none"> Increase household recycling rate to 43% 50% reduction in our contamination levels of recycling in apartments 50% reduction in our contamination levels of recycling in houses 50% reduction in contamination of council office bins 	<ul style="list-style-type: none"> Increase current household and council office recycling rate to 80%
A City with clean streets, public spaces and foreshore area	You rate your waste services 90%, for overall satisfaction	<ul style="list-style-type: none"> Above 90% community satisfaction levels for waste services 	<ul style="list-style-type: none"> Above 90% community satisfaction levels for waste services
A City that uses new technology to process waste better and reduce environmental impacts	We currently do not use any advanced waste treatment to process waste, it goes to landfill.		<ul style="list-style-type: none"> 100% kerbside waste treated to get more value out of our waste prior to landfill

How we will get there

We will use the *Waste Hierarchy* to change the way we think about waste and to consider the use of technologies to manage waste more efficiently.

It starts by avoiding waste in the first place, then looks to reuse and recycle before new technologies are then considered to treat waste and recover energy. The disposal of any residual waste product is the last step.



Our focus on Years One to Four of the strategy will be on managing the NOW better:

- Achieving service improvements and efficiencies
- Educating and helping our community to reduce waste and increase recycling
- Investigating the potential use of innovative waste infrastructure that can transform the way we manage and reduce our waste:
 - What is the most appropriate form of 'Advanced Waste Treatment' for Council to access?
 - Should we develop new facilities, potentially in partnership with others, or use facilities owned by others?
 - What is the best way to deliver services to you?
- Engaging with you regarding our services and how they could be funded.

We want to be well informed about the benefits, risks and costs associated with alternative technologies, so we can make the right choices.

Deciding on what technology suits our City will depend on what our goals are for our waste. Some technologies can cost more but achieve very high landfill diversion rates (between 80-98%). Others don't cost as much but can achieve landfill diversion rates around 60%.

Our focus on Years Five to Ten of the strategy will be on creating the NEW:

- Delivering a future, based on using the best available Advanced Waste Treatment technology for our City.

Outcome 1: A City that reduces waste

Working together, we can achieve a significant **(15%)** reduction in waste over the next four years. Whilst our kerb-side waste collection that ends up in landfill is currently 14% higher than the state average, through being careful consumers, avoiding products with too much packaging and reducing the amount of food that households throw away each week, we plan to reverse this. A focused effort on reducing food waste presents a significant opportunity, as this currently makes up 40% of our waste going to land fill.

Where we are now:

Our kerbside waste to landfill is **14% higher** than the Metropolitan Melbourne average.



552kg/household/year

Where we want to be by 2022:

Our residents produce **15% less** waste than in 2018 from their kerbside bins, now lower than the Metropolitan Melbourne average.



469kg/household/year



Priority Actions

- ACTION 1** We will recognise and reward households and businesses that reduce their total waste
- ACTION 2** We will work with businesses to rescue surplus food and create food rescue opportunities (working with organisations such as *Second Bite* to get food to those in need)
- ACTION 3** We will promote a reduction of single use plastics (e.g. plastic bags and coffee cups)
- ACTION 4** We will work with residents and businesses to encourage the purchase of products that can be reused and have minimal packaging
- ACTION 5** We will advocate to government to ban use of non-recyclable items and packaging through the Product Stewardship Scheme

How you can play your part....

As a community, we buy more than ever and the products that we buy often include unnecessary packaging.

Next time you are at the shops:

- Bring your own reusable bags
- Choose the fresh fruit and vegetables without any packaging.
- Take a shopping list with you, and plan your meals before you get your groceries (this not only saves food waste, but can save you money too!).

Measures of Success

- Kilograms of waste generated per household
- Percentage of waste bin content that is food or recyclables
- Kilograms of food rescued

Case Study

South Melbourne Market converts food waste to compost

Port Phillip Council's commitment to excellence in waste management was recognised in 2017 through winning two prestigious environmental awards for a waste reduction project at South Melbourne Market, which it owns and runs. The project demonstrated that it is possible to successfully divert organic waste from landfill on a large scale, and is a template for communities, consumers, traders and Council working together for the future.

The South Melbourne Market successfully diverts organic waste from landfill on a large scale, via two processes. The first uses a GAIA recycling machine which via a fermentation and dehydration process produces a nutrient rich fertiliser known as SoilFood™. This machine takes 8.4 tonnes a week of waste products such as fish offal, coffee, leftovers from cafes, citrus, onion, breads and non-edible waste that can't be used by the food banks. This process produces over a tonne a week of fertiliser.

Over a year GAIA also harvests 300,000 litres of waste water which is stored in tanks and then used for wash-down and irrigation purposes. To date the market has diverted over 950 tonnes from landfill.

The market also has a large-scale vermicomposting of green waste, resulting in a specially formulated, organic garden fertiliser called Market Magic;

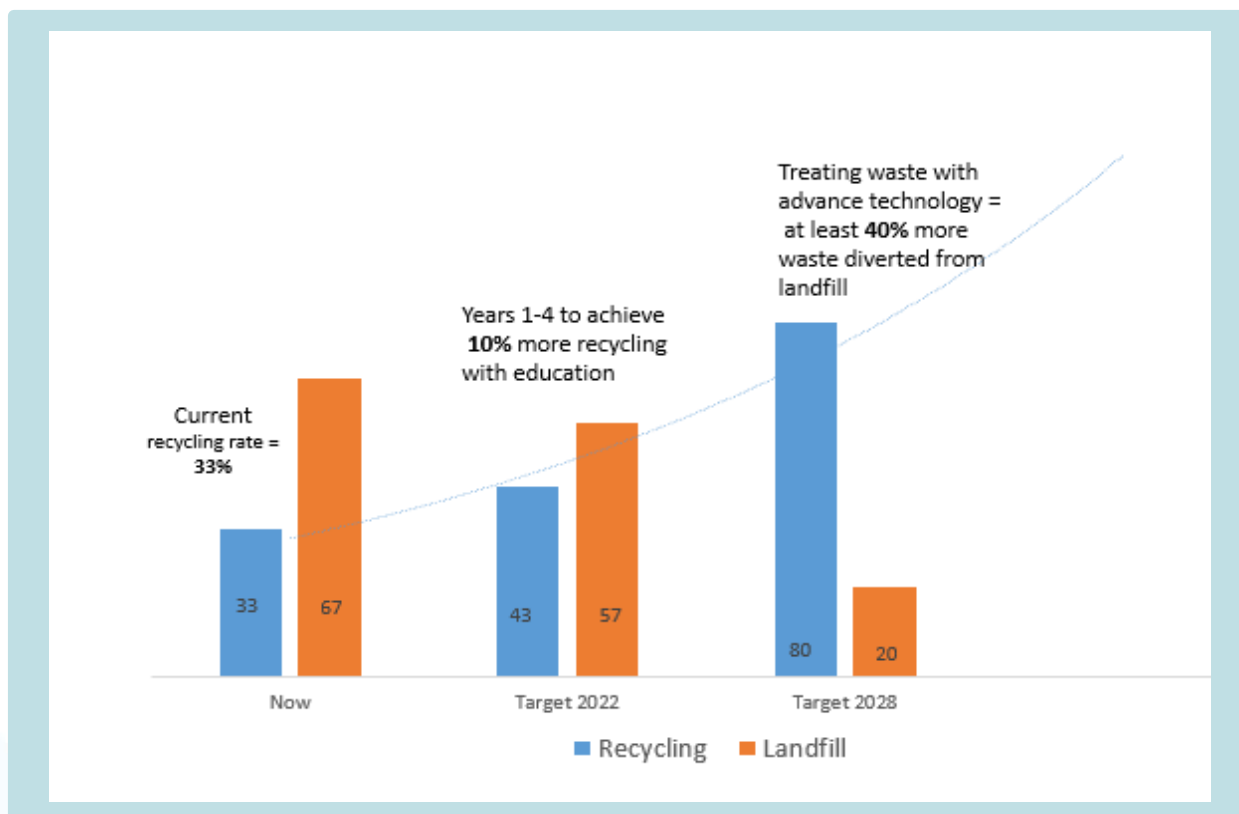
Keen gardeners can purchase both fertiliser products from the Market Office or nursery and florist traders.

Outcome 2: A City that maximises reuse and recycling

Over the next four years, we aim to achieve at least a **10% improvement** on our recycling rate. We can do this by investing more in education and tools to help our community do the right thing with their waste.

It can be difficult for people to know what can and can't be recycled. We also know from audits, and from what we have heard from our community, that people living in apartments find it harder to recycle correctly, compared with those in houses. We will work closely with body corporates, landlords and residents of apartment buildings to fix this. We will also ensure new developments are designed better to support residents recycling efforts.

Recycling correctly is more important than ever, as the recycling industry is facing change and needs our help. We must make sure our recycling is as clean as possible – with the aim for 'zero' contamination. This is a big change for all of us.



Priority Actions

ACTION 6 We will educate and support residents, businesses and Council staff to recycling more and ensure recycled waste is not contaminated including education campaigns aimed to:

- Reduce the confusion of 'what can be recycled?'
- Explain how contamination affects the recycling process
- Help residents and businesses to make the best choices when purchasing, minimising items that cannot be recycled.

ACTION 7 We will work towards the following targets, and encourage the Victorian Government to set these for Fishermans Bend:

- 80% of waste diverted from landfill
- 50% reduction in food waste.

ACTION 8 We will set waste guidelines for developers to make sure it is easy for people who live in apartments to recycle.

ACTION 9 We will trial insinkers and other recycling methods in existing and new apartments.

ACTION 10 We will make sure Council's waste collection contracts maximise recycling.

ACTION 11 We will make sure Council purchasing practices prioritise the use of recycled and recyclable products.

How you can play your part....

A key change needed will be to reduce waste being placed in the wrong bin. This will avoid recycling ending up in landfill, or the contamination of recyclable materials.

- In your kitchen make sure you have separate bins, one for waste and a one for recyclables.
- Your bathroom has recyclables too, so make sure they also go in the right place.
- If you live in an apartment, work with your neighbours and body corporate to find better ways to recycle right.

Measuring our progress

- Percentage landfill diversion rate:
 - Residential (houses & apartments/units)
 - Commercial (food)
 - Council
- Percentage of recyclables in waste bin:
 - Residential (houses & apartments/units)
 - Council
- Percentage of clean waste that can be recycled:
 - Residential
 - Council
- Percentage hard and dumped waste recycled/reused
- Percentage of recycled materials used by Council in its projects and programs

Case Study

Helping residents in apartments to recycle right

A project run in the City of Yarra and City of Melbourne municipalities successfully increased recycling capacity, improved education and engagement with residents and trialled new solutions in both privately and publicly serviced apartment blocks.

Both municipalities improved recycling infrastructure and signage, educated residents through traditional means such as letter-box drops, posters and displays and trialled new approaches such as workshops and foyer stalls to engage residents.

City of Melbourne also introduced new recovery streams by assisting building managers to arrange a clothing/household goods donation bin and by trialling an e-waste collection in 10 buildings.

The project achieved the following results:

Privately collected waste and recycling:	18 % less recycling in waste 11 % less contamination in recycling
Council collected waste and recycling:	26 % less recycling in waste 23 % less contamination in recycling

Opportunities such as these will form part of the new education and engagement campaigns to increase recycling and reduce contamination in our household recycling bins.

Outcome 3: A City with clean streets, parks and foreshore

Our proximity to central Melbourne, the 11 kilometres of foreshore and beautiful tree-lined streets, our vibrant shopping strips and the many attractive parks and open spaces make Port Phillip a popular destination for residents, businesses and visitors. We are second only to the City of Melbourne as the most visited municipality in the state.

As our residential, business and visitor populations continue to grow, we need to ensure we remain a City with clean streets, parks and foreshore areas for everyone to enjoy, through investing in our services and the prevention of litter and dumped rubbish.

Priority Actions

- ACTION 12** We will collect dumped rubbish quickly, increase awareness of the services available to dispose of hard rubbish, and educate people about the costs and risks of litter and dumped rubbish.
- ACTION 13** We will conduct a review of our street and beach cleaning services to ensure our additional investment is put to best use.
- ACTION 14** We will place bins where they are most needed to help prevent litter.
- ACTION 15** We will use solar powered bins that compact waste to reduce the number of bins needed in our parks and streets.
- ACTION 16** We will trial the use of charity bins within apartment buildings.

How you can play your part....

A clean City can only happen with your help:

- If you are moving, make the most of our hard waste service. Your unwanted household goods can get recycled right!
- Don't turn a blind eye to dumped waste, help us keep our streets clean by contacting council so we can respond quickly.
- Don't overfill your household bins, as this can cause litter on our streets.

Measuring progress

- Community satisfaction for:
 - Street cleanliness
 - Parks/foreshore areas
 - Kerbside collection
- Compliance with Council's service targets

Case Study:

Minimising waste collection vehicles in built up areas

In areas with high rise buildings with a mixture of apartments and businesses, collection of waste can take place by a combination Council and multiple private operators.

In response to this issue, New York and Los Angeles in the USA reviewed their current waste collections systems, and introduced new zoned collection systems for areas with commercial waste.

Commercial collection zones would mean that only one or two waste contractors would service an entire area of the city.

This relatively simple and cost-neutral change bought about a range of benefits, including: reduction in carbon emissions and improved air quality from fewer collection vehicles; reduced traffic congestion; more consistent service; and greater compliance with health and safety and environmental regulations.

Zoned collections allowed each area greater influence in achieving improved recycling performance.

A Council review of current services in the City of Port Phillip will enable us to assess the feasibility of altering our waste services in commercial zones, particularly in our growth zones that could have a major impact on waste management, the reduction in truck traffic, and more stable costs into the future.

Outcome 4: A City that uses new technology to process waste better and reduce environmental impacts

To make a big change to how we manage our waste, we will need to become a City that uses new technology to treat our waste and reduce environmental impacts.

After all re-usable and recyclable material has been separated, the remaining 'residual' waste must be managed. Landfill is the most common way, but it is also the least sustainable solution due to carbon emissions.

Advanced waste treatment technologies can be used to generate energy from waste that cannot be recycled, rather than it going to landfill.

In the first four years of the strategy we will focus on investigating alternative waste technologies, to ensure we make the best choice for a long-term waste solution the City. We will also use technology, such as 'on-board' truck software, to gather new data to better understand how we can improve our services in the short term.

Priority Actions

- ACTION 17** We will collect more data and use it to plan and deliver better Council services.
- ACTION 18** We will continue to make the most of new technology, including investing in plant and equipment.
- ACTION 19** We will investigate Advanced Waste Treatment options, comparing the benefits and costs of different technologies available, to engage with you further and inform our future service decisions.
- ACTION 20** We will partner and explore the feasibility of a 'Sustainability Hub' that could address our future waste and recycling needs, and potentially deliver the following benefits:
- Supply of recycled water to public spaces
 - Access to advanced waste treatment
 - Better waste drop-off facilities for our community
 - A new shared depot and service facility
 - Community education, training spaces and sporting facilities.

Measuring our progress

- Percentage tons of kerbside waste treated to get more value out of our waste prior to landfill.

Note: We will use improved data to develop further measures that capture the cost and efficiencies of managing our waste.

Case Study

What is Advanced Waste Treatment?

We are aiming for an 80% recycling rate for our waste by 2028. This is a bold target, and we can only achieve it in partnership with our community. Council will commit to improving services and introducing new technologies. We will need real, change from our residents and businesses to achieve these goals.

To achieve targets above 40-45%, new advanced waste technologies will be needed. These technologies get more value out of our waste.

Waste minimisation and recycling will continue to be the priority for the City and we are looking for new ways that will maximise the recovery of waste and treat waste as a valuable resource.

The separation of waste and recycling at the kerbside is still the most effective means of recycling, however the more different types of bins to collect, the higher the collection costs. Because of the extra waste that will come with large population growth and the ever-increasing cost of landfilling, it makes environmental as well as economic sense to seek new solutions

New technology solutions have been developed that allow the recovery of value from the waste in our kerbside waste bins without needing these extra bins at your home. These new technologies are called Advanced Waste Treatment facilities and can come in three different types:

- Biological processes
- Advanced sorting solutions, and
- Thermal treatment (waste to energy) solutions.

These three solutions are used widely in Europe, and usually are used as a combination of types that suit the needs of the community. These technologies are all being considered by Council as the next big step in waste management. The table below compares these processes. Each process has a variety of options to choose from.

COMPARISON: ADVANCED WASTE TREATMENT PROCESSES

	Our Current Process	Biological Process		Thermal Process			
Initial Assessment	Landfill	Mechanical Biological Treatment	Anaerobic Digestion	Grate Incineration	Gasification (two stage)	Pyrolysis	Plasma Arc Gasification
Significantly reduces GHG* emissions	✗	✓	✓	✗	✓	✓	✓
Generates renewable/non-fossil fuel gas for end use energy supply	✓	✓	✓	✗	✓	✓	✓
Waste diversion target	✗	✓	✓	✗	✓	✓	✓

*GHG = Green House Gas (Source: Improved Resource Recovery within Fishermans Bend (Feasibility Analysis September 2017))

Deciding on what technology suits our City will depend on what our goals are for our waste. Some technologies such as the thermal processes can cost more but achieve very high landfill diversion rates (between 80-98%). Others including the biological treatments don't cost as much, but can achieve landfill diversion rates around 60%.

The minimisation of greenhouse gas emissions is a critical consideration in this decision-making process. Both thermal and biological waste processes still do have a level of greenhouse gas emissions as an output of processing waste, however these levels are significantly lower compared with current landfill (refer table above).

World leading Examples of Advanced Waste Treatment:

- **Thermal Advanced Waste Treatment in the heart of Vienna**

In the 1980s, the forward-thinking City of Vienna commissioned architect and environmentalist Friedensreich Hundertwasser, to work with engineers to develop an innovative thermal heating plant, Spittelau, in the middle of the city.

The development aimed to set new standards, and the architect promised the strictest compliance with measures of environmental safety at the new plant, which would not only transform waste into power, but be an urban space that connected with its community in a creative and sustainable way.

The facility thermally processes 265,000 tons of waste annually, and generates enough electricity and heat to manage its own needs and to service more than 60,000 nearby businesses and homes.

The district is now famous for its philosophy of 'waste, energy and art'. It is a popular tourist attraction for people interested in both art and science, with its innovative approach to urban waste, and its unusual design and decorative façade. It is also popular with local communities, featuring a rooftop restaurant, a lobby gallery space, and an outside space that is home to year-round festivals and arts events.

- **Combined Biological and Thermal Advanced Waste Treatment in Singapore**

Singapore is building two giant facilities, to be built side by side that will take Singapore's treatment of waste water and solid waste to new levels of efficiency.

Each will supply resources to run the other and between them, the two plants in Tuas will be able to treat 40 per cent of Singapore's waste by 2027.

The Tuas Water Reclamation Plant (TWRP) and the Integrated Waste Management Facility (IWMP) will complement each other in such a way that they will be completely energy self-sufficient.

For example, energy generated at the waste facility through the thermal processing of household waste will be used to run the water treatment plant. In return, treated water from the water treatment plant will be piped to the waste facility for cooling purposes.

Food waste and sludge from the water treatment process will also be co-digested, through a process called anaerobic digestion where micro-organisms convert waste into biogas, which will increase the biogas yield (waste to energy).

SAVING WATER ENERGY AND SPACE

According to the National Environment Agency (NEA) of Singapore, the co-location of the water and waste treatment facilities is the first of its kind in the world, enabling Singapore to see the benefits of combining waste and water treatment, whilst minimising the land footprint.

Advanced Waste Treatment and Emissions

Both the examples above of advanced waste treatment use thermal and/or biological treatment processes to turn waste to energy (heat and electricity). These processes all still generate greenhouse gas emissions of some level. Not all emissions are captured using these processes, however these processes significantly reduce greenhouse gas emissions compared with landfill.

APPENDIX 1-

Action and financial overview

A sustained reduction in waste		2018-2022	2023-2028	Partners					Total \$
				State Government	Local Governments	Residents, Business and Community Groups	Landlords	Developers	
Action 1	We will recognise and reward households and businesses that reduce their total waste								
Action 2	We will work with businesses to rescue surplus food and create food rescue opportunities (working with organisations such as Second Bite to get food to those in need)								
Action 3	We will promote a reduction of single use plastics (e.g. plastic bags and coffee cups)								
Action 4	We will work with residents and businesses to encourage the purchase of products that can be reused and have minimal packaging								
Action 5	We will advocate to government to ban use of non-recyclable items and packaging through the Product Stewardship Scheme								
Action 6	We will educate and support residents, businesses and Council staff to have good recycling habits, recycling more and ensuring recycled waste is not contaminated								\$4,723,000
Action 7	We will work towards the following targets, and encourage the Victorian Government to set these for Fishermans Bend: <ul style="list-style-type: none"> 80% of waste diverted from landfill 50% reduction in food waste 								
Action 8	We will set guidelines for developers to make sure it's possible for people who live in apartments to recycle								
Action 9	We will trial insinkerators and other recycling methods in apartments								
Action 10	We will make sure Council's waste contracts maximise recycling								

Action 11	We will make sure Council purchases can be recycled								
Action 12	We will collect dumped rubbish quickly, and educate people not to litter or dump rubbish								
Action 13	We will conduct a review of our street and beach cleaning services to ensure our additional investment is put to best use								
Action 14	We will put litter bins where they are most needed and can be easily used								
Action 15	We will use solar powered bins in some of our parks and streets								
Action 16	We will trial the use of charity bins within apartment buildings.								
Action 17	We will collect more data and use it to plan and deliver better Council services								
Action 18	We will continue to make the most of new technology, including plant, equipment and waste treatment.								
Action 19	We will develop an Advanced Waste Treatment plan that compares the benefits and costs of different technologies available, and to inform future service decisions								
Action 20	<p>We will partner and explore the feasibility of a Sustainability Hub to better address our future waste and recycling needs, including:</p> <ul style="list-style-type: none"> • Supplying recycled water to public spaces • Access to Advanced Waste Treatment • Providing community access to better waste drop-off facilities • A new shared depot and service facility • Community education, training spaces and sporting facilities 								

APPENDIX 2 -

Case Study

How Council's in Victoria pay for waste services

Of the 79 councils within Victoria, currently 72 apply a separate waste service charge in some form in addition to their general rates. The City of Port Phillip is one of the seven councils which currently do not have this separate charge.

Reasons Councils implement a waste charge can vary, which include:

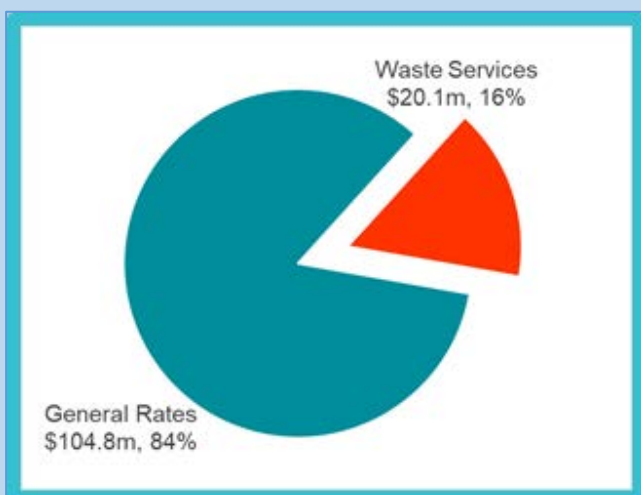
- A transparent approach to charging for the service,
- The ability to reward those who recycle right;
- Having a 'user pays' system where only those who have access to the service pay for the service; and
- To manage the highly variable costs of collecting and disposing of waste, which is typically much higher than CPI inflation.

COST OF WASTE

The cost to provide current waste services is growing, and consistently exceeds inflation. The reason for the increase in costs for waste services includes:

- Landfill disposal costs increasing, and expected to increase even more with the closure of landfills over the next 10 years;
- Increased cost of fuel to collect the waste from your homes;
- Increase labour costs to undertake waste services;
- Changes within the recycling industry; and
- Increases in how much waste we all create;

Below is City of Port Phillip Budget for 2018/19, which shows the proportion of the budget spent on waste services.



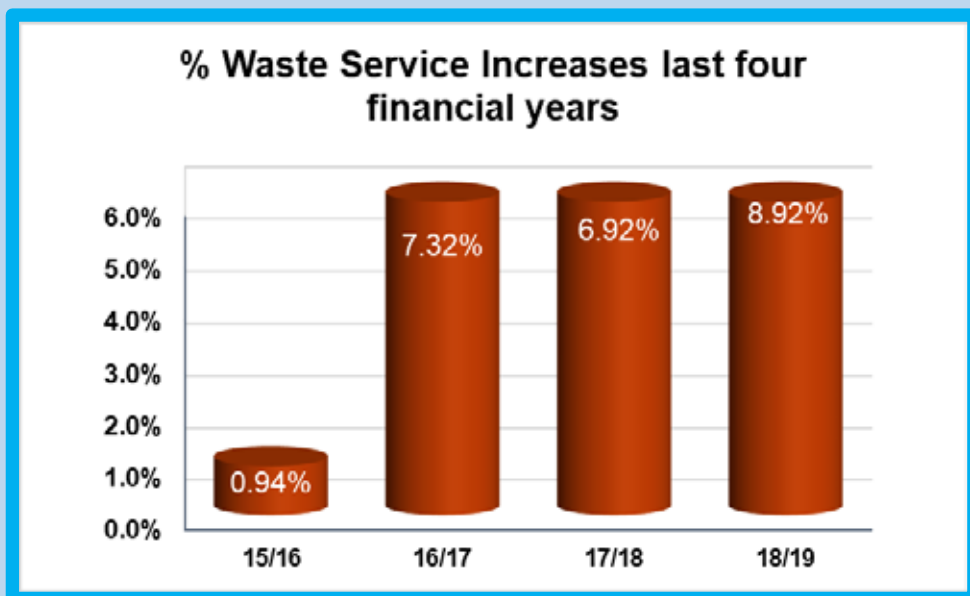
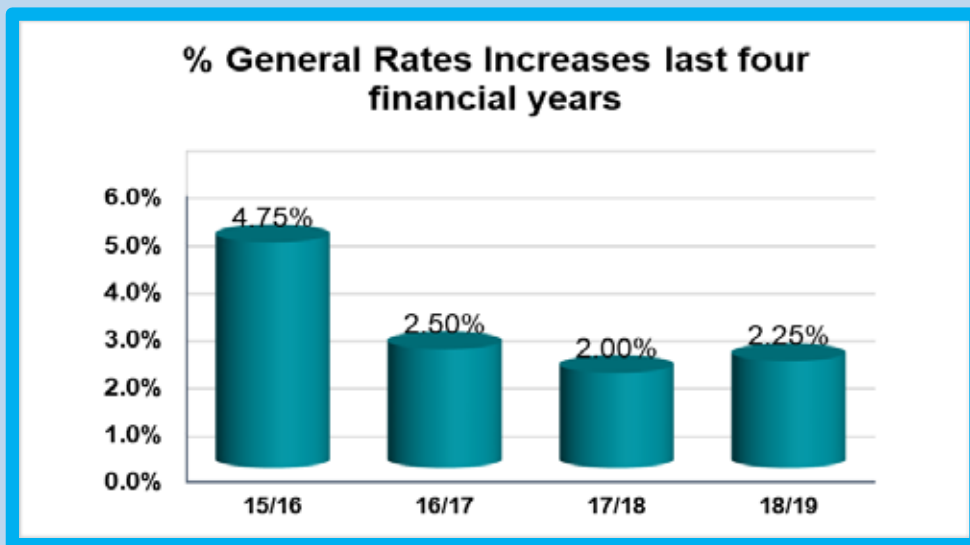
The cost for City of Port Phillip's waste services is currently built into the general rates, which all landowners pay each year. Currently this is approximately 16% of your total rates bill.

RATE CAPPING

In recent years, Councils without a waste charge have begun to rethink their approach of how they charge for waste services. This has come after the introduction of 'Rate Capping' by the State Government in 2016. The State Government has applied a maximum increase Councils can make to their rates annually, and subsequently changed the ability of Council to increase general rates as they needed. Instead rates are controlled and capped each year by Essential Services Commission (ESC).

These rules around local government spending mean councils without a separate waste charge will struggle to provide any new services to the community, or to make large changes to the services they currently provide.

In the last three financial years general rates increases have been capped to inflation at 2.5 per cent, 2 per cent and 2.25 per cent respectively. Historically, Council's rate increases have increased between four to five per cent annually, much higher than inflation largely because of the higher increase in waste costs (see figures below).





For more information, please contact us via:

www.portphillip.vic.gov.au/contact_us.htm

Phone: 03 9209 6777
Facsimile: 03 9536 2722
SMS: 0432 005 405

You can also visit our website:

www.portphillip.vic.gov.au

Postal address:

City of Port Phillip, Private Bag 3, PO St Kilda, VIC 3182



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