

Don't Waste It!

Waste Management Strategy 2018-28



DRAFT
Image to come

Attachment 1

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This Strategy 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

DRAFT

Womin djeka

Council respectfully acknowledges the Yaluk-ut Weelam Clan of the Boon Wurrung.

We pay our respect to their Elders, both past and present.

We acknowledge and uphold their continuing relationship to this land and water on which we rely.

We recognise the intrinsic connection of the Traditional Owners to Country and acknowledge their contribution in the management of land, water and resources.



MESSAGE FROM THE MAYOR

The Councillors and I are pleased to release our
Don't Waste It! Waste Management Strategy 2018-28.

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.

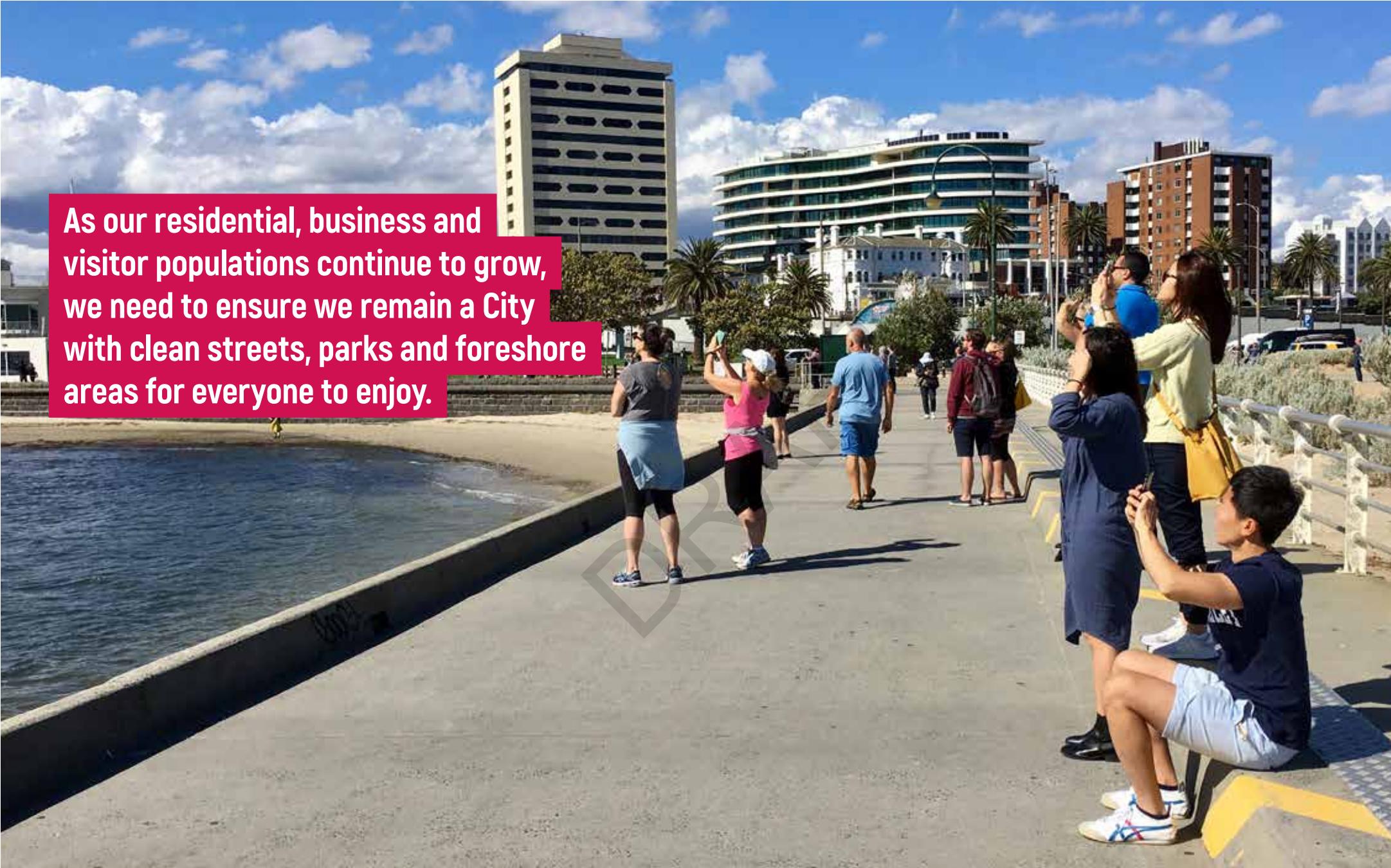
We are excited to present this Strategy and look forward to working with you over the next 10 years to create a more sustainable Port Phillip.



Cr Bernadene Voss
Mayor
City of Port Phillip



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.

A wide-angle photograph of a coastal urban area. In the foreground, a paved walkway runs parallel to a sandy beach. Several people are walking or standing on the walkway, some taking photographs with their phones. In the background, there are several modern buildings of varying heights, including a prominent white tower with horizontal stripes and a curved, multi-story building. The sky is blue with scattered white clouds.

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.



We have smart solutions for a sustainable future

Strategic Direction 3
2017-2027 Council Plan

WHY WE NEED THIS STRATEGY

This **Don't Waste It - Waste Management Strategy 2018-28** 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. This Strategy supports the City of Port Phillip's **Act and Adapt - Sustainable Environment Strategy 2018-28** by creating a pathway for Council and the community to reduce our impact on the environment, relating to waste management.

The Council Plan 2017-27 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 for 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.

Moving towards a future in which zero waste is disposed of to landfill requires a circular pathway, from how things are made through to what we buy.

A circular economy for waste and resource recovery in Victoria involves the makers, users, sellers and the recycling industry to work together. We need to help ensure that:

- all products and packaging can be recycled
- recycled materials are used back into new products
- when we recycle we ensure we don't contaminate our bins.

Our City is looking for opportunities such as advanced waste treatment as part of this circular economy to ensure that we can recover and reuse as much of our waste as possible, and get the most value out of our waste.

The Victorian Government is currently preparing a whole-of government circular economy policy and action plan. It has already committed to improve the demand for recycled products through government procurement. This Strategy has actions to ensure that our City does the same (refer actions 10 and 12).



Source: Recycling Industry Strategy Plan, The State Government of Victoria Department of Environment, Land, Water and Planning 2018.



We must work collaboratively as a community to achieve four priority outcomes and become:

A City that reduces waste

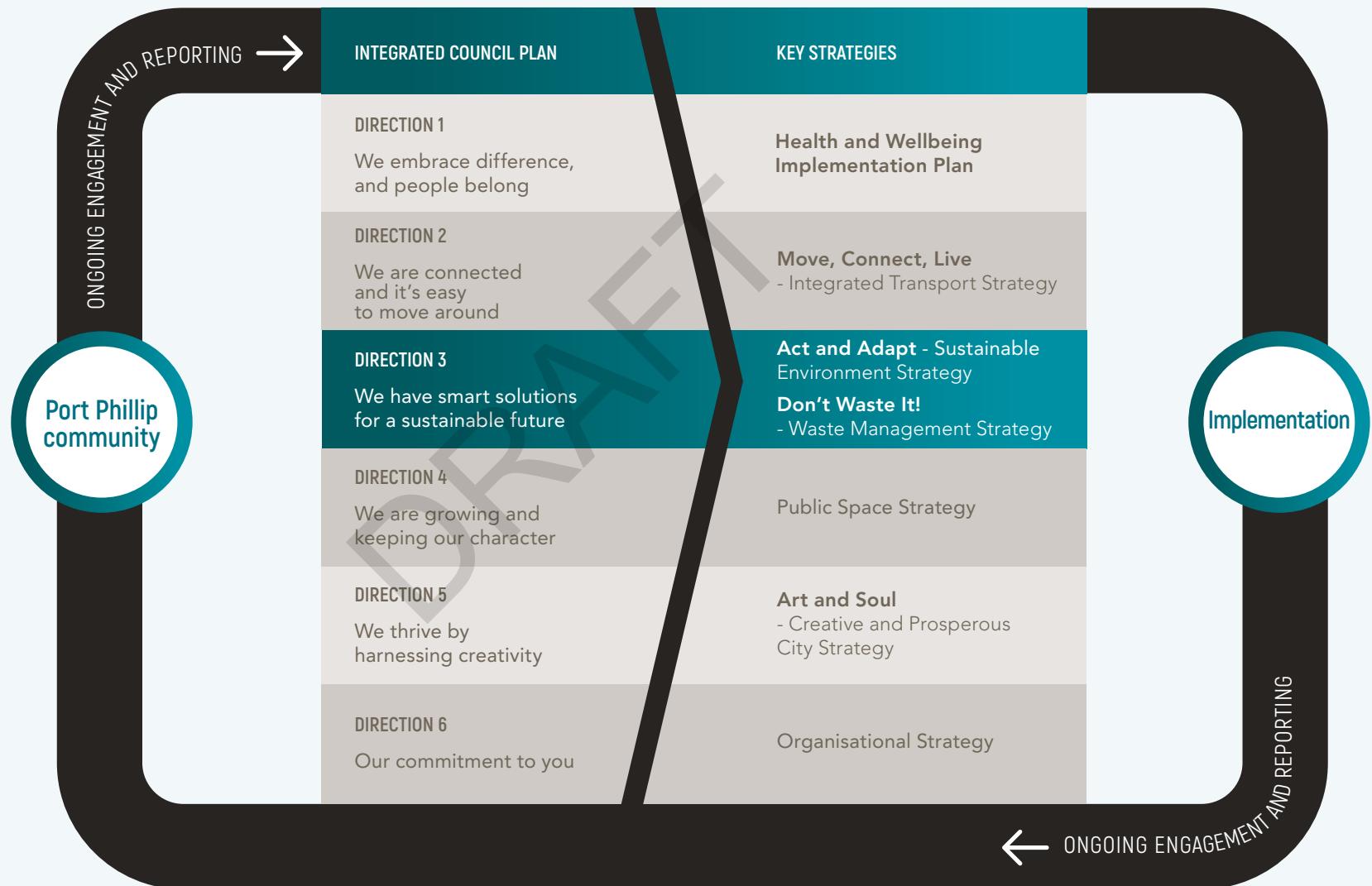
A City that maximises reuse and recycling

A City with clean streets, public spaces and foreshore areas

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

COUNCIL PLAN - OUR STRATEGIC DIRECTIONS

The Don't Waste It! Waste Management Strategy outlines new solutions to how we manage waste. This Strategy 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.



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 reduces environmental impact of transporting organic waste to landfill.



Population growth

Our City's resident population is projected to increase 23 per cent 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 manage waste treatment as a Council.



Urbanisation

Port Phillip 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 in 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. The 24-hour depot service centre, and associated noise 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 (refer Victorian Government's Waste to Energy strategy (expected March 2019)).

There are currently four 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.



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 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 local solutions.

WHERE ARE WE NOW?

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

We reuse and recycle **70 per cent** of all hard waste collected, which compares well against the metropolitan Melbourne average of only **12 per cent**.

Waste collected that is reused and recycled

70%	12%
City of Port Phillip	Metropolitan Melbourne average

Source: Local Government Victoria (LGV) mandatory Annual Performance Report 2016/17 <http://knowyourcouncil.vic.gov.au/compare-councils>

We produce more waste than the average Melbourne household

Each year, the average household in Port Phillip produce **554 kg** of waste which ends up in landfill. This is **14 per cent** higher than the average metropolitan Melbourne household.

Waste sent to landfill per household

City of Melbourne	304 kg
Metropolitan Melbourne average	475 kg
City of Port Phillip	554 kg

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.

Recycling rates

City of Melbourne	27 %
Metropolitan Melbourne apartment average	23 %
Metropolitan Melbourne average	43 %
City of Port Phillip	33 %

Source: EC Sustainable - Metropolitan Waste to landfill audit project 2014. www.mwrrg.vic.gov.au

We can do better with sorting our recycling

Food waste, plastics and paper account for **60 per cent** of all waste which ends up as landfill from Metropolitan Melbourne households. Many of these items could be reused or recycled. The average household throws away over \$2,200 worth of food every year which makes up a significant **35 per cent** of all waste.

Waste to landfill

Paper and cardboard	10 %
Plastics	15 %
Food waste	35 %
Other - including nappies textiles, glass and E-waste	45 %

We need to 'clean up' our recycling

Council's current kerbside recycling collection service has a contamination rate of almost **9 per cent** which is good, but we can do better (Australian average is **15 per cent**). Apartment buildings, however contaminate their recycling bins much more (**up to 40 per cent**), 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.

Kerbside recycling contamination rate



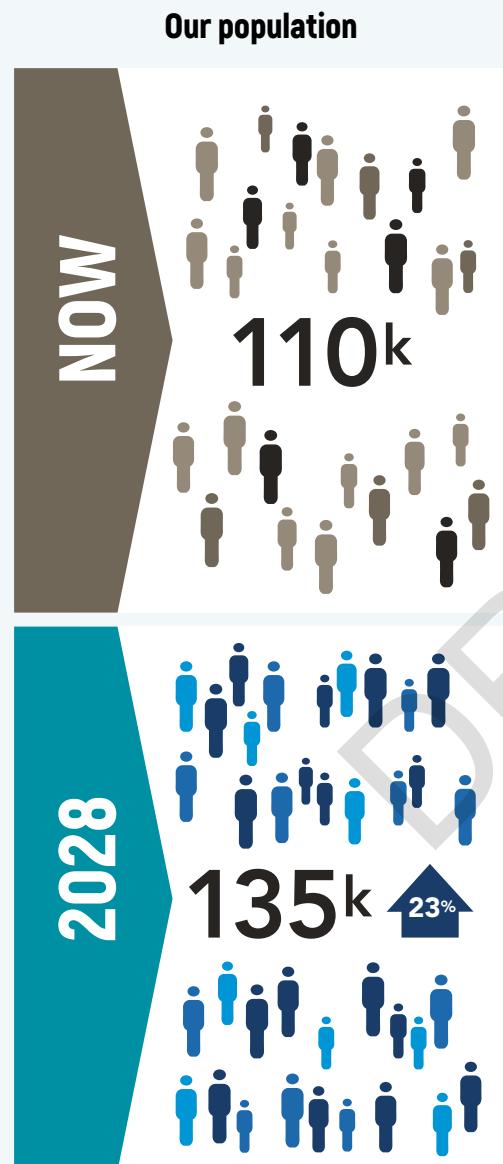
WHAT WILL BE DIFFERENT?

Where our waste goes

This diagram 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.

It represents our current and target:

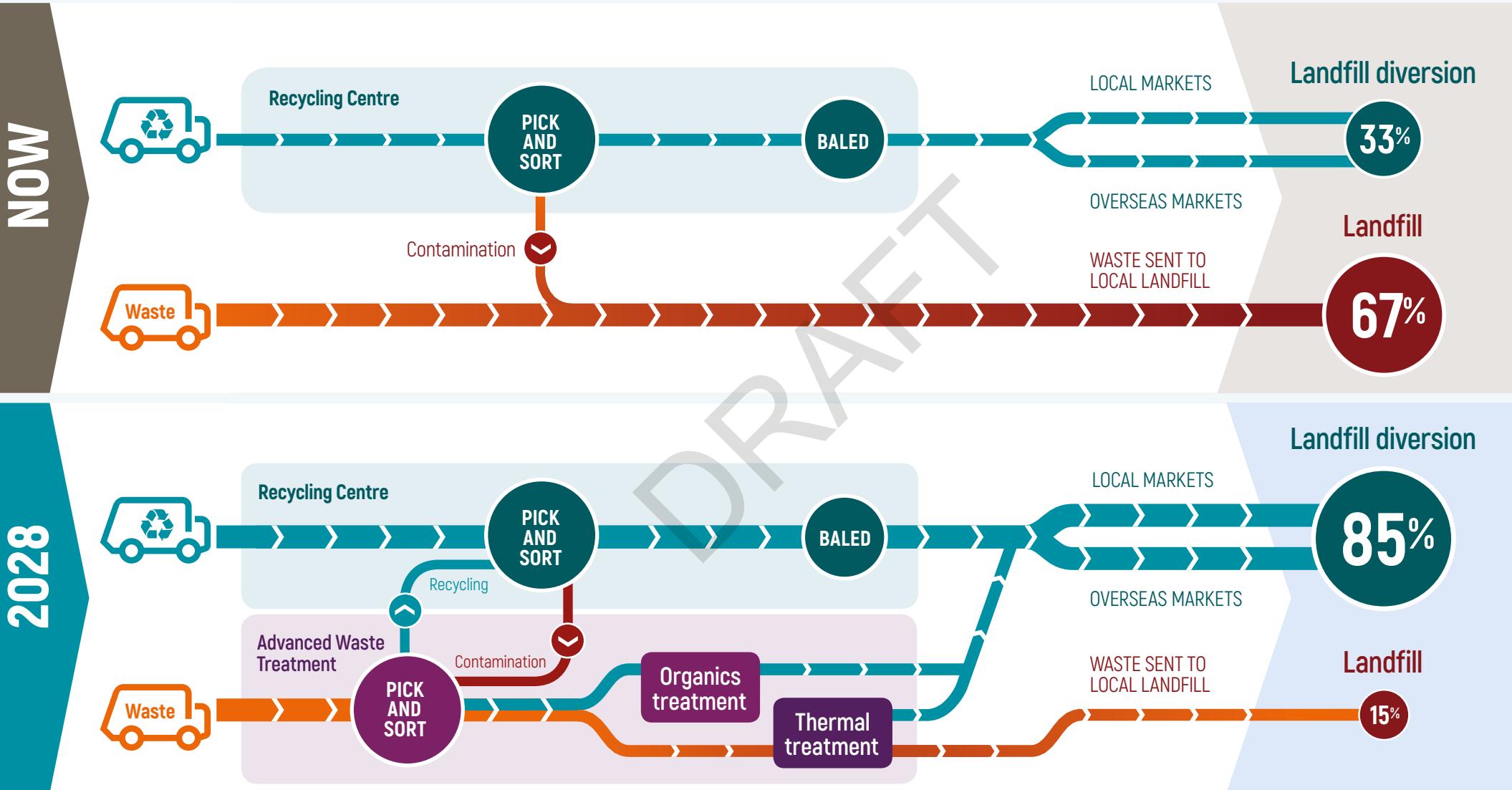
- recycling rates
- contamination rates
- waste generated per household



Where we live and how we manage our waste



Waste and recycling processes



OUR CURRENT SERVICES



Household kerbside services

The City of Port Phillip provides a weekly collection of waste and recycling from each household in the City. Collection is undertaken via a variety of diesel garbage trucks Monday to Friday. Council runs a two-bin collection system (garbage and recycling). There is no third green bin service.

Most of the waste collected from the kerbside bins goes to landfill. Currently none of our waste is processed using advanced technologies.



Business kerbside services

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, resulting in extra costs and more trucks on the roads

Cleaning public spaces

Council undertakes a wide range of services to ensure our public space 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.

Dumped waste

- A reactive service responds to customer requests to investigate and collect dumped rubbish.
- A pro-active service is also provided in hot-spot areas.

Street cleaning program

Street sweeping occurs using mechanical and manual processes, fortnightly in residential areas, and daily in commercial zones. These services run 24 hours a day, seven days a week.

Public bins

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.





Resource Recovery Centre

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.

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.

This facility will not meet the City's needs of our growing community. A review to relocate this facility is currently underway to ensure this service is maintained into the future (see Action 21, page 39).

Hard and green waste collection

Council currently provides a hard and green waste collection service, that can be accessed via a booking system (four collections per year for houses, and six for apartments).

Hard waste is any larger general household waste that will not fit in a kerbside bin. It includes furniture, mattresses, whitegoods and e-waste. Green waste includes organic garden matter such as tree prunings, grass clippings weeds and vines.

Leading our neighbours

Hard waste recycling rate

70% **12%**

City of
Port Phillip

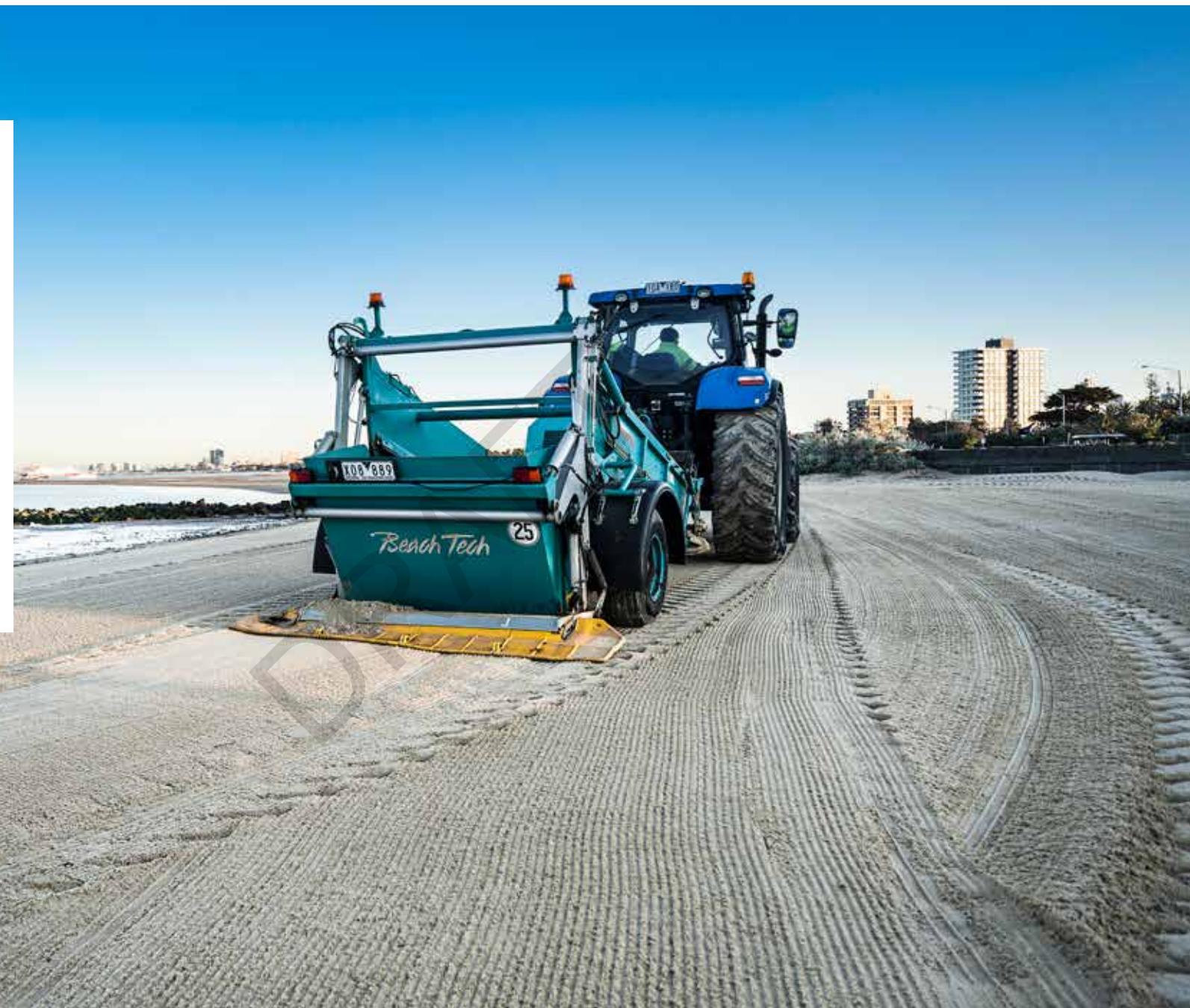
Metropolitan
Melbourne
average

Beach and foreshore litter

Council cleans the foreshore and beach mechanically every day over summer. Litter picking crews also collect material from the low tide line to the seawall twice daily.

Beach and foreshore litter consists mainly of smaller items that are dropped either illegally (cigarette butts, plastic bags/wrappings and animal litter) or naturally/ accidentally (leaf litter and seaweed).

Currently all litter collected from the beach and foreshore is sent to landfill.





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

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.

As part of developing this Strategy, Council have engaged further with the community through surveys and forums, to ensure that we are focused on your issues and that the targets we are setting meet your expectations.

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

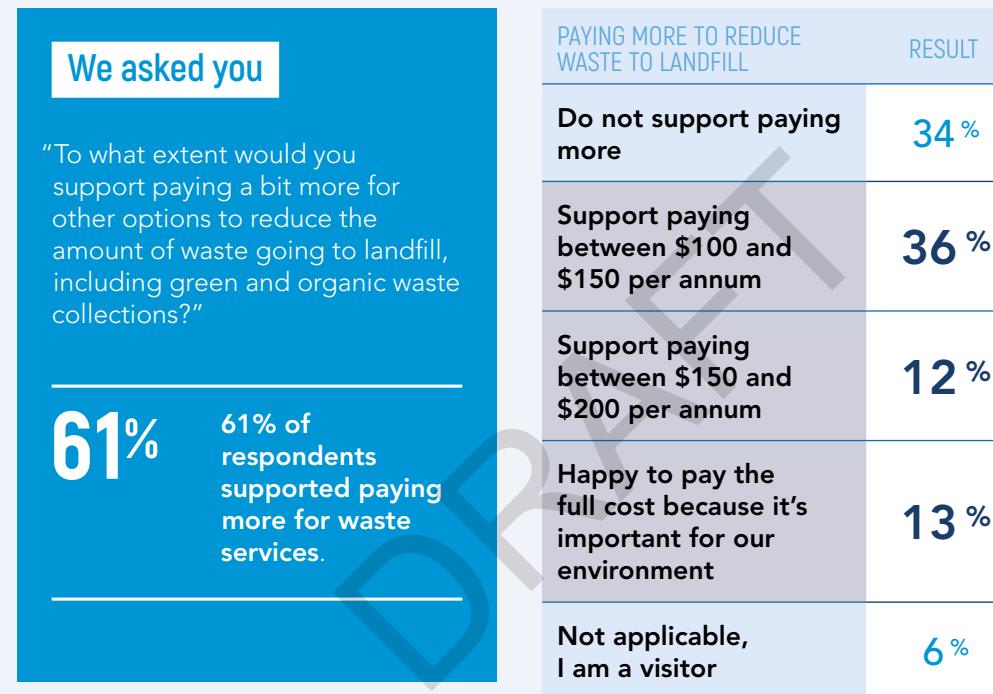
A plan to manage the impacts of population growth on waste

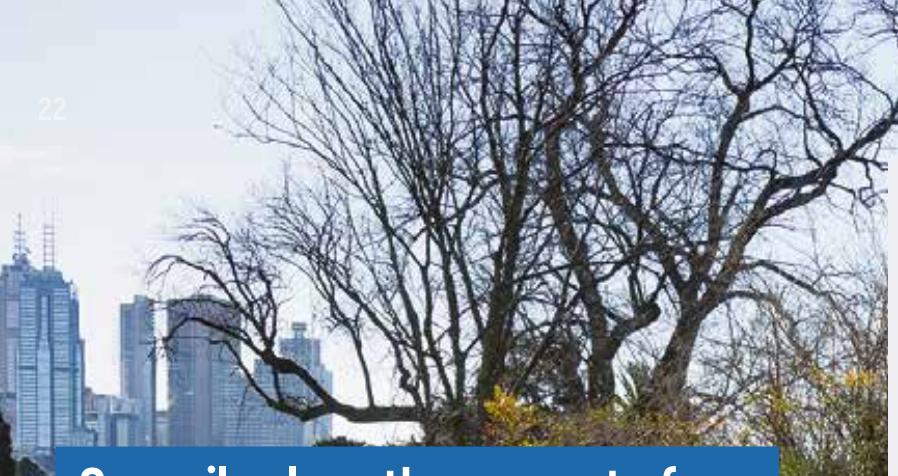
More information and education from Council to help improve how we recycle

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.





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.



OUR PARTNERS

To achieve a sustainable reduction in waste, we need to work in partnership with others. Our residential and business communities, Victorian 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 neighbouring Councils
- Water authorities, including South East Water and Melbourne Water.

Council's role

Trusted service provider

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 though 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 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.sustainableportphilip.com

HOW WE WILL GET THERE

Our focus on years five to ten of the Strategy will be on delivering a future, based on using the best available advanced waste treatment technology for our City.

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.



Managing the now

Years 1 to 4

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.

Trialling community food recycling opportunities

Engaging with our community regarding waste services and how they could be funded.

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?

Creating the new

Years 5 to 10

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.

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 to 98 per cent with thermal processes). Others don't cost as much but can achieve landfill diversion rates (around 60 per cent for biologic processes).

> **Refer case study, page 35.**

Outcome 1

A City that reduces waste

Working together, we can achieve a significant reduction in waste over the next four years.

Our kerbside waste collection, that goes to landfill is currently 13 per cent higher than the metropolitan Melbourne Average. We plan to reverse this through encouraging avoidance of products with too much packaging, and reducing the amount of food that households throw away each week. A focused effort on reducing food waste presents a significant opportunity, as this currently makes up 40 per cent of our waste going to landfill.

Targets

BY 2022

20% reduction

- waste reduction per house/apartment
- waste per Council employee

BY 2028

50% diverted

- food waste diversion from landfill within house/apartment, Council and commercial buildings *

Priority actions

1. We will recognise and reward households and businesses that reduce their total waste.
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).
3. We will promote a reduction of single use plastics (for example plastic bags and coffee cups).
4. We will work with residents and businesses to encourage the purchase of products that can be reused and have minimal packaging.
5. We will advocate to government to ban use of non-recyclable items and packaging through the Product Stewardship Scheme.

* Participating commercial operations only.

Source: Sustainability Victoria Local Government Annual Report 2015/16 <http://www.sustainability.vic.gov.au/Government/Victorian-Waste-data-portal/Victorian-Local-Government-Annual-Waste-Services-report>



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 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.

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!).

Outcome 2

A City that maximises reuse and recycling

Improving our current recycling rate by more than 25 per cent * will ensure we are all doing our bit. 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.

Targets

Landfill diversion

BY 2022

Houses	Apartments	Council buildings	Public bins
43%	29%	58%	85%

BY 2028 [#]

Houses	Apartments	Council buildings	Public bins
85%	85%	85%	85%

Contamination

BY 2022

50%

Reduction in contamination levels in apartments, houses and Council building recycling bins.

* The current house and apartment recycling rates are 33 per cent and 23 per cent respectively. A 27 per cent increase from these levels is equivalent to our targets of 43 per cent and 29 per cent respectively. The current Council building recycling rate is 38 per cent. A 53 per cent increase from this level will be equivalent to our target of 58 per cent.

[#] Treating waste with advanced technology results in at least 40 per cent more waste diverted from landfill.

Targets

Recyclables in waste bins

BY 2022

50%

Reduction in recyclable items in apartment, houses and Council building waste bins *.

Priority actions

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.
7. We will work towards the following targets, and encourage the Victorian Government to set these for Fishermans Bend:
 - 85 per cent of waste diverted from landfill
 - 50 per cent reduction in food waste.
8. We will set waste guidelines for developers to make sure it is easy for people who live in apartments to recycle.
9. We will seek grant funding to trial incinerators within existing apartments.
10. We will make sure Council's waste collection contracts maximise recycling.
11. We will trial community composting and other communal food recycling opportunities for commercial premises.
12. We will make sure Council purchasing practices prioritise the use of recycled and recyclable products #.

* The current levels of recyclables in waste bins in apartments, houses and Council buildings is approximately 25 per cent.

Baseline and target to be set in Year 1 of this Strategy

Case study

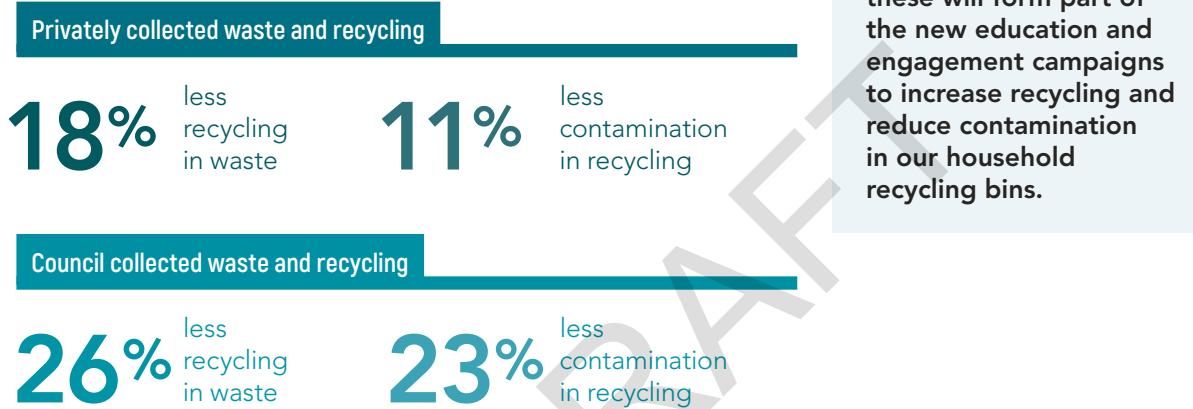
Helping residents in apartments to recycle right

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:



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.

Case study

Food and garden waste recycling

Each year in Victoria, households throw out 250,000 tonnes worth of food (enough wasted food to fill Melbourne's Eureka Tower). Recycling of food waste is a priority of the Victorian Government, as stated in the Victorian Organics Resource Recovery Strategy.

Inner city councils, including Port Phillip have an added complexity for waste management, with much denser living, and less space for storage and collection of waste. This means we need a tailored approach to better manage food waste, which currently makes up over 35 per cent of our waste to landfill.

The option to introduce a kerbside garden/food waste collection service was investigated as part of the Strategy, but was found to be extremely expensive due to high set up costs, and would only meet the needs of half of our community. The major challenge for Port Phillip is the lack of a good solution for recycling food waste from apartments.

It has been acknowledged by the State Government's Metropolitan Waste and Resource Recovery Group (MWRRG) that inner city councils, including the City of Port Phillip, will need a different approach.

Some councils which have an existing garden waste service have opted to include food as part of a combined food and garden organics (FOGO) collection service. However, most councils have not made this change given that the processing of FOGO is highly sensitive to contamination, and can result in all organic waste ending up in landfill.

The City of Port Phillip is investigating new Advanced Waste Treatment (AWT) options currently being planned for in Victoria, as a future solution for food recycling. These AWT processes have the potential to provide better overall environmental and cost outcomes for the community, compared to introducing a new third bin to our collection service.

The new Advanced Waste Treatment options can pre-sort recyclables and organics from the waste bin as part of a treatment process. This type of solution would prevent the need for any new collection service. The City of Port Phillip is working with the MWRRG to ensure a solution for the community that minimises additional trucks on the road, is cost effective and is accessible to all residents (including those living in apartments).



Outcome 3

A City with clean streets, parks and foreshore areas

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 the City of 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.

Targets

BY 2022

90% satisfaction

Maintain community satisfaction levels for waste services.

BY 2028

90% satisfaction

Maintain community satisfaction levels for waste services while managing growth.

Priority actions

13. 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.
14. We will review our street and beach cleaning services to ensure additional investment is put to best use, and service standards meet community expectations.
15. We will ensure public litter bins are located where they are most needed to prevent litter.
16. We will use solar powered bins that compact waste to reduce the number of bins needed in our parks and streets.
17. We will trial the use of charity bins within apartment buildings.



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 of 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 (refer Action 18 on page 39).

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.

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.

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 for 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.

Targets

BY 2028

100%
waste treated

Waste treated to maximise its value prior to landfill.

- House/apartment waste
- Council buildings waste

Priority actions

18. We will collect more data and use it to plan and deliver better Council services.
19. We will continue to make the most of new technology, including investing in plant and equipment.
20. We will investigate advanced waste treatment options, comparing the benefits and costs of different technologies available, to inform our future service decisions.
21. 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
 - Shared depot and service facilities
 - Better waste drop-off facilities for our community
 - Community facilities.

What is advanced waste treatment

We are aiming for an 85 per cent 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 per cent, 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 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
- Thermal treatment (waste to energy) solutions.

These three solutions are used widely in Europe and parts of Asia, and are often used in combination to meet 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.

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.

Comparison: advanced waste treatment processes

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

Our current process	Advanced thermal processes	Biological processes
Potential landfill diversion		
45%	98%	60%
Landfill	Gasification / Pyrolysis / Plasma	Mechanical biological treatment and/or anaerobic digestion
Significantly reduces green house gas emissions		
✗	✓	✓
Generates renewable/non-fossil fuel gas for end use energy supply		
✓	✓	✓
Improved waste diversion		
✗	✓	✓

Source: Fishermans Bend Waste and Resource Recovery Strategy 2017.
<https://www.fishermansbend.vic.gov.au/documents>



World leading examples of advanced waste treatment

Case study

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 science and art, with its innovative approach to urban waste, and its unusual design and decorative façade. It's 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.

Source: <https://www.wienenergie.at/eportal3/ep/channelView.do/channelId/-51715>

Case study

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.

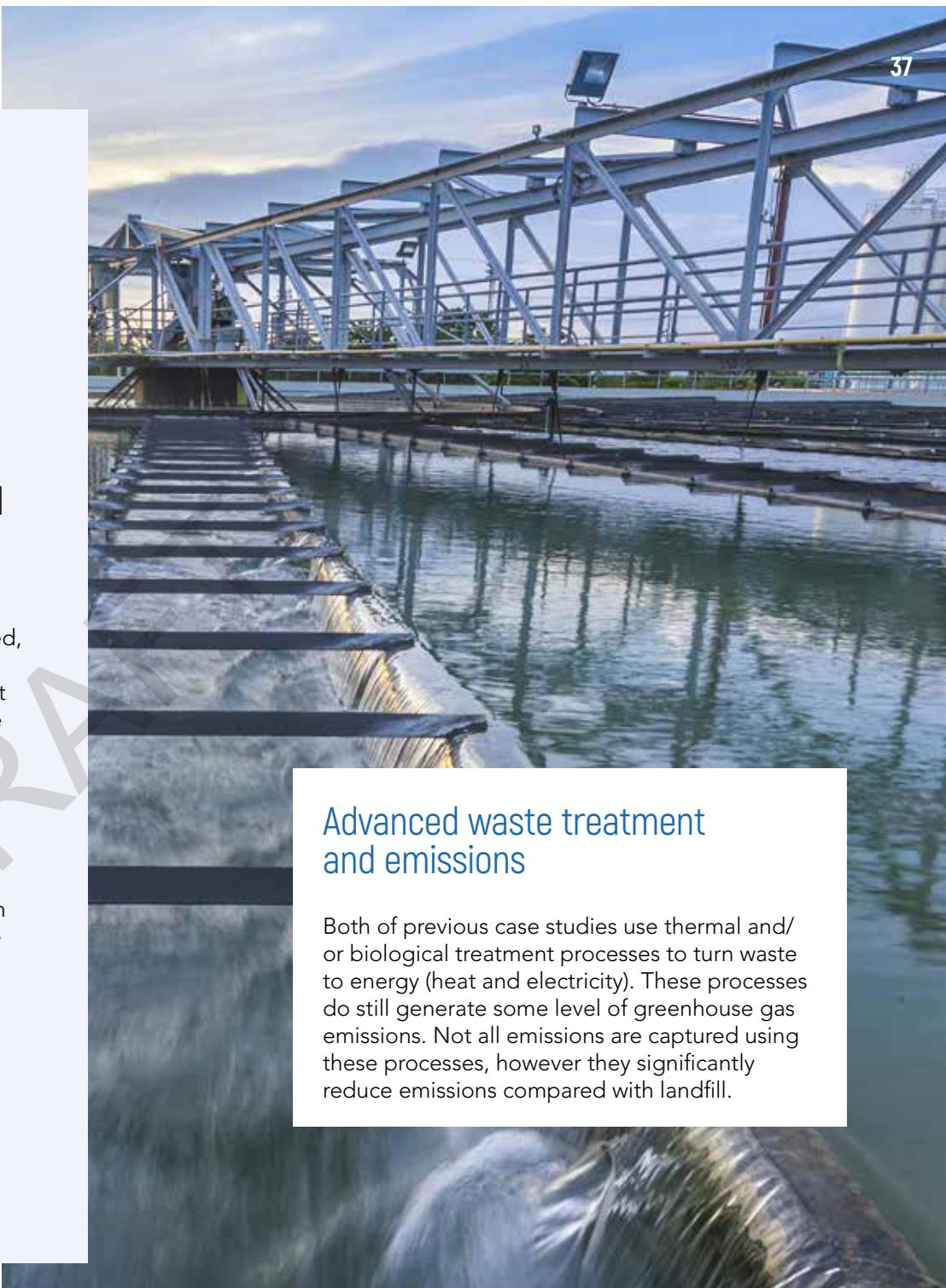
The Tuas Water Reclamation Plant (TWRP) and the Integrated Waste Management Facility (IWMF) will complement each other in such a way that they will be completely energy self-sufficient.

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 of previous case studies use thermal and/or biological treatment processes to turn waste to energy (heat and electricity). These processes do still generate some level of greenhouse gas emissions. Not all emissions are captured using these processes, however they significantly reduce emissions compared with landfill.

APPENDIX 1

Four year implementation action plan and financial overview with total four year budget of \$4,723,000

	A SUSTAINED REDUCTION IN WASTE 2018-22	PARTNERS				
		VG	LG	RBC	LL	DEV
1.	We will recognise and reward households and businesses that reduce their total waste.					
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).					
3.	We will promote a reduction of single use plastics (e.g. plastic bags and coffee cups).					
4.	We will work with residents and businesses to encourage the purchase of products that can be reused and have minimal packaging.					
5.	We will advocate to government to ban use of non-recyclable items and packaging through the Product Stewardship Scheme.					
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.					
7.	We will work towards the following targets, and encourage the Victorian Government to set these for Fishermans Bend:					
	• 80 per cent of waste diverted from landfill					
	• 50 per cent reduction in food waste.					
8.	We will set guidelines for developers to make sure it's possible for people who live in apartments to recycle.					
9.	We will seek grant funding to trial insinkerators within existing apartments.					
10.	We will make sure Council's waste collection contracts maximise recycling.					
11.	We will trial community composting and other communal food recycling opportunities for commercial premises.					

VG: Victorian Government

LG: Local Government

RBC: Residents, businesses and community groups

LL: Landlords

DEV: Developers

A SUSTAINED REDUCTION IN WASTE 2018-22		PARTNERS				
		VG	LG	RBC	LL	DEV
12.	We will make sure Council purchasing practices prioritise the use of recycled and recyclable products.					
13.	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.					
14.	We will review our street and beach cleaning services to ensure additional investment is put to best use, and service standards meet community expectations.					
15.	We will ensure public litter bins are located where they are most needed to prevent litter.					
16.	We will use solar powered bins that compact waste to reduce the number of bins needed in our parks and streets.					
17.	We will trial the use of charity bins within apartment buildings.					
18.	We will collect more data and use it to plan and deliver better Council services.					
19.	We will continue to make the most of new technology, including investing in plant and equipment.					
20.	We will investigate advanced waste treatment options, comparing the benefits and costs of different technologies available, to inform our future service decisions.					
21.	We will partner and explore the feasibility of a Sustainability Hub to better address our future waste and recycling needs, including:	<ul style="list-style-type: none"> • Supplying recycled water to public spaces • Access to Advanced Waste Treatment 	<ul style="list-style-type: none"> • Providing community access to better waste drop-off facilities • A new shared depot and service facility 	<ul style="list-style-type: none"> • Community education, training spaces and sporting facilities. 		

APPENDIX 2

Case study

How councils 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.

The reason councils implement a waste charge can vary, including:

- 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
- managing the highly variable costs of collecting and disposing of waste, which is typically much higher than consumer price index (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 include:

- increased cost of landfill disposal
- increased cost of fuel to collect the waste from homes
- increased labour costs to undertake waste services
- changes within the recycling industry
- increases in how much waste we all create.

16%

Current portion of your rates bill that goes to waste

The cost for City of Port Phillip's waste services is currently built into the general rates, which all landowners pay each year.

Proportion of the 2018/19 budget spent on waste services

Waste Services

\$20.1m 16% of total annual budget

Rate capping

In recent years, councils without a waste charge have begun to rethink their approach to how they charge for waste services.

This has come after the introduction of 'Rate Capping' by the Victorian Government in 2016. The Victorian 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 the 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 4 to 5 per cent annually, much higher than inflation largely because of the higher increase in waste costs.

	2015/16	2016/17	2017/18	2018/19
General rates increases	4.75 %	2.50 %	2.0 %	2.25 %
Waste service increases	0.92 %	7.32 %	6.92 %	8.92 %



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