

City of Monash

Waste Management Strategy

December 2017



Contents

Introduction.....	8
1.1 Council’s policy documents.....	10
1.2 Council’s Waste Management Strategy Goals.....	14
1.3 Profile of Municipality.....	16
Legislative and Strategic Context.....	19
2.1 State Government Policy Directions.....	19
2.2 Legislation.....	24
Sources of Council’s Waste.....	26
3.1 Household Waste Services.....	27
3.1.1 Contracts.....	27
3.1.2 Kerbside Residual Waste Services.....	28
3.1.3 Kerbside Recycling Collection Service.....	29
3.1.4 Kerbside Green Waste Collection Service.....	30
3.1.5 Annual Hard Waste.....	32
3.1.6 Waste Stream Evaluation.....	35
3.2 Commercial Waste Services.....	36
3.3 Waste Transfer Station.....	38
Future Trends.....	40
4.1 Waste Trends.....	40
Challenges.....	42
5.1 Increase in Residential Densification.....	42
5.2 Expectation of Increasing Diversion from Landfill.....	42
5.3 Substances with Specific Disposal Requirements.....	43
5.4 Working with CALD Communities.....	43
5.5 Multi-Unit Developments (MUDs).....	44
5.6 Recent Introduction of Rate Capping.....	45
5.7 Hard Waste Collection.....	45
5.8 Landfill Closures in South-East Melbourne.....	46
5.9 Disposal Challenges.....	46
5.10 Food Organics Disposal.....	48
5.11 Equalisation of Bin Services.....	48
5.12 Litter.....	49
5.13 Bin Contamination.....	49

Opportunities for Improvement.....	51
6.1 Organics Processing.....	51
6.2 Municipal Waste.....	52
6.3 Comingled Recycling.....	52
6.4 Hard Waste Collection.....	53
6.5 Dumped Rubbish.....	54
6.6 Waste Charge.....	55
Feedback from the community.....	56
Strategy Development.....	56
Draft Strategy and survey feedback.....	56
Action Plan.....	59
References.....	66
Appendix A Council Plan.....	69



List of Figures

Figure 1-1 Extent of Municipality	9
Figure 1-2 Waste Hierarchy	9
Figure 1-3 Population growth in Monash 2005-2016	16
Figure 1-4 Monash population projections.....	16
Figure 1-5 Languages spoken at home.....	17
Figure 1-6 Housing Structure of Monash Residents.....	18
Figure 1-7 Changes in housing composition	18
Figure 3-1 Actual Numbers of Bins in Operation	26
Figure 3-2 Number of Times Residential Bins Were Emptied.....	26
Figure 3-3 Domestic Residual Tonnages	28
Figure 3-4 Domestic Residual Service Costs	28
Figure 3-5 Domestic Recycling Tonnages.....	29
Figure 3-6 Net Domestic Recycling Cost	30
Figure 3-7 Domestic Green Waste Tonnages	31
Figure 3-8 Domestic green waste costs	31
Figure 3-9 Hard Waste Tonnages	33
Figure 3-10 Average weight of hard waste per tenement.....	33
Figure 3-11 Cost of Annual Hard Waste Service	34
Figure 3-12 Percentage of Recycled Hard Waste	34
Figure 3-13 Domestic Waste Tonnages 2015/16	35
Figure 3-14 Commercial Residual Waste Costs	36
Figure 3-15 2015/16 Transfer Station Waste Composition	38
Figure 3-16 Waste Transfer Station Tonnages	39
Figure 4-1 Projected Waste Tonnages	41
Figure 4-2 Predicted cost for Waste Disposal and Collection	41

List of Tables

Table 1-1 Other Monash Council Documents	10
Table 1-2 Key elements	14
Table 2-1 Legislation	24
Table 3-1 Waste Service Contracts	27
Table 3-2 Hard Waste Disposal	32
Table 5-1 Landfill Levies.....	47
Table 5-2 Standard Australian Bin Lid Colours	49
Table 6-1 Optional Changes to Residential Bins.....	52
Table 6-2 Hard Waste Services in Metropolitan Melbourne.....	54
Table 9-1 Key performance indicators.....	59
Table 9-2 Action Plan	60
Table A-1 Council Objectives	70

Glossary

TERM	DEFINITION
CALD	Culturally and Linguistically Diverse
C & D	Construction and Demolition
C & I	Commercial and Industrial
CBD	Central Business District
CPI	Consumer Price Index
CRL	Clayton Regional Landfill
EPA	Environment Protection Authority
ESC	Essential Services Commission
FOGO	Food Organics Green Organics
IAP2	International Association for Public Participation
LGPRF	Local Government Performance Reporting Framework
LPO	Litter Prevention Officer
MIP	Metropolitan Implementation Plan
MRF	Materials Recovery Facility
MSW	Municipal Solid Waste
MUD	Multi-Unit Developments
MWRRG	Metropolitan Waste Resource Recovery Group
NEPC	National Environment Protection Council
RRC/TS	Resource Recovery Centre / Transfer Station
SWRRIP	State-wide Waste and Resource Recovery Infrastructure Plan
TAFE	Technical and Further Education
VGC	Victoria Grants Commission
WMS	Waste Management Strategy
WPI	Wage Price Index
WRR	Waste Resource Recovery

Executive Summary

The City of Monash is situated in the metropolitan region of Melbourne and is home to a diverse mix of people, cultures and backgrounds. Along with most municipalities in Victoria, the City of Monash is facing a range of waste management challenges. These challenges are driven by several factors:

- The drive to reduce waste sent to landfill and increase resource recovery;
- The closure of local landfills and subsequent larger transport distances for disposal of wastes;
- Increasing cost of the EPA levy;
- Recent introduction of Rate Capping and its effect on services;
- Growth in the development of Multi Unit Developments;
- Population increase; and
- Impending implementation of a food organics recovery scheme

As a result of these changes, the City of Monash has developed this Waste Management Strategy to prepare for the future of the waste industry and deliver a sustainable and effective service to the community. Council has identified five goals that will underpin Council's commitment to waste management and the Community. They are:

- To increase waste diversion from landfill;
- To minimise waste generation;
- Leading the way;
- Serving our customers; and
- Pride in our city.

The strategic context behind the Strategy is a mix of state and federal policies, legislation and guides which sets out the pathway local government is required to follow. This pathway is a means of incentivising waste minimisation and resource recovery, and reducing our dependence on landfills.

In developing this strategy, there was significant consultation sought with the community and stakeholders to identify areas of importance, improvements and feedback and actions to include in the Strategy. Some of the key actions identified are:

- Introduce a food organics recovery scheme;
- Consider implementing a separate Waste Charge in the future should costs rise at an unsustainable level;
- Introduce a user pays at-call hard waste collection;
- Support innovation and new technology in the waste industry and collection methods; and
- Introduce a range of education programs to improve resource recovery and waste minimisation within the community

Introduction

The City of Monash (Council) has prepared this Waste Management Strategy (WMS) to guide the way waste is managed in the municipality over the next ten years (2017-2027). **Figure 1-1** shows the geographic extent of the Monash municipality which is located approximately 20km south east of the Melbourne Central Business District.

There have been several significant changes since the last strategy was prepared approximately 20 years ago:

- Growth in the number of Multi Unit Developments (MUDs);
- The recent introduction of Rate Capping and its effect on services;
- The impending implementation of the comingled green / organics bin;
- Closure of local landfills;
- The increasing cost of the EPA landfill levy;
- Waste collection is subcontracted out rather than being undertaken by Council's staff; and
- Separation of the waste organic stream into green, recyclable and residual wastes each requiring separate management.

The council maintains a key role in waste management for the municipality through the provision of the following waste collection services:

- Residual waste collection on a weekly basis;
- Recyclable waste collection fortnightly;
- Green waste collection fortnightly;
- Commercial waste collection
- Annual hard rubbish collection;
- Waste collection and maintenance in public areas; and
- The Monash Waste Transfer Station



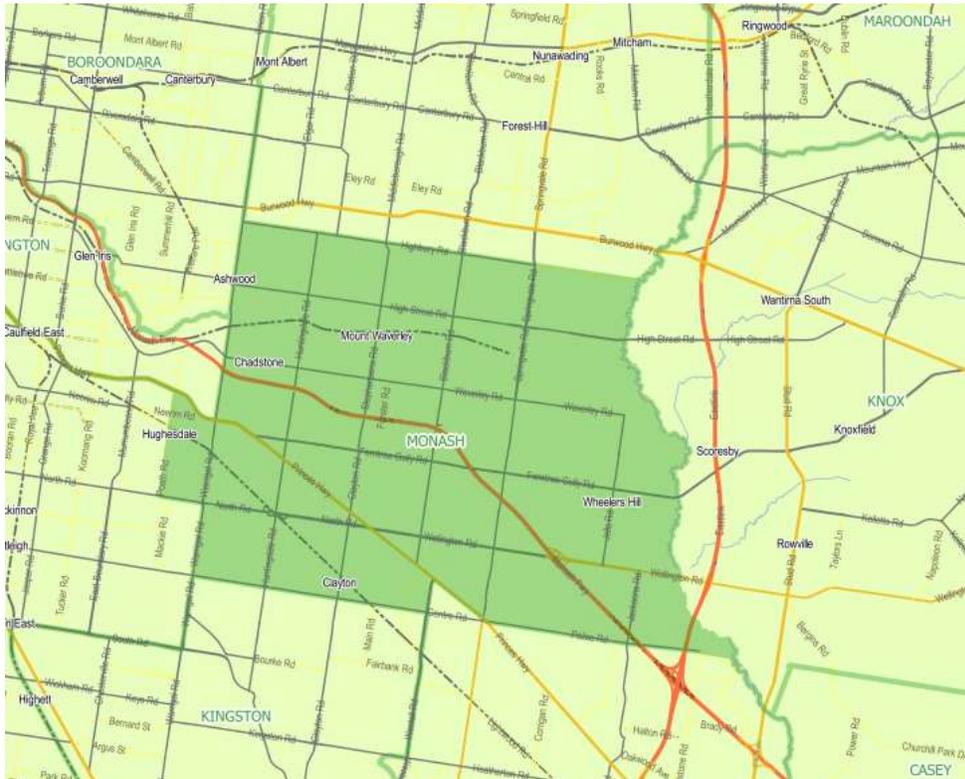


Figure 1-1 Extent of Municipality

The Waste Hierarchy, developed by the EPA in **Figure 1-2**, shows the preferred approach to waste management and provides a tool for understanding waste and how resource loss can be minimised. The hierarchy is contained within the *Environment Protection Act 1970* and is one of the guiding principles of environment protection. Council is committed to implementing this approach in their *Environmental Sustainability Strategy 2016*.

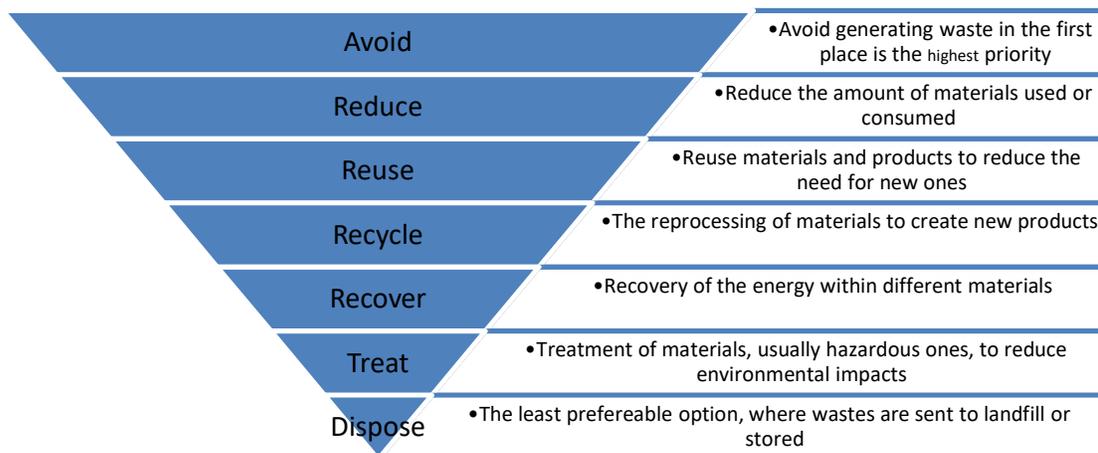


Figure 1-2 Waste Hierarchy

1.1 Council’s policy documents

The Council Plan (2013-17) presents the following Vision and Mission statements:

<i>Vision: An inviting city, diverse and alive with activity, designed for a bright future</i>
<i>Mission: Making a difference through community commitment, expertise and leadership</i>

Council’s policy documents do not contain specific objectives relating to waste management. The following objectives are identified in the Monash Council Plan 2013- 2017 and contain aspects which are applicable to the WMS (**Appendix A**).

The table in **Appendix A** contains the strategies to achieve the outcomes as specified in the Council Plan and the waste related actions which support these strategies.

The following Council documents are relevant to the Waste Management Strategy (**Table 1-1**)

Table 1-1 Other Monash Council Documents

Council Document	Relevance to strategy
Council Plan 2017-2021	<p>This is a four-year plan with four strategic objectives identified by Council;</p> <ul style="list-style-type: none"> • A liveable and sustainable city; • Inviting open and urban spaces; • An inclusive community; and • Responsive and efficient services. <p>Under these objectives, Council aims to plan for financial sustainability, deliver leading customer service, provide sustainable waste management services and enhance community consultation, all of which apply to the Waste Management Strategy.</p>
Monash 2021 – a thriving community	<p>This is a long-term vision for the future of Monash over the next 10 years and sets out priorities over this time. To achieve this, succeeding Council plans must be aligned to support and reinforce Monash 2021. There are four areas of focus:</p> <ul style="list-style-type: none"> • A fair and healthy community: with goals to encourage community activity, planning for refurbishment, creation of community facilities and providing services and support to the people of Monash

	<ul style="list-style-type: none"> • A planned and connected city: involves encouraging economic development and improvements to Monash’s infrastructure • An inclusive and safe community: focuses on involving the community and supporting cultural diversity and creativity through festivals and events • A green and naturally-rich city: Directed at improving recycling and litter management and promoting sustainable actions. There are further goals to reduce resource use and greenhouse gas emissions and to educate the people of Monash about environmental issues. The goals for this focus area are: <ul style="list-style-type: none"> • To keep the green leafy character and value of open spaces • Environmental sustainability is part of business as usual • High quality recreational facilities for organised sport and exercise; and • Where people have a positive attitude to recycling and being water wise
<p>A Healthy and Resilient Monash: Integrated Plan 2017-2021</p>	<p>This document identifies the importance of maximising opportunities for all members of the community and improving social engagement. In relation to the WMS, this plan will influence the goals and overarching outcomes for the community which Council intend and play a large role in the engagement program.</p>
<p>Draft Economic Development Strategy and Implementation Plan 2017-2021</p>	<p>As a major employment base and thriving location for businesses and jobs, Monash plays an important economic role within the region. For this action plan, the key strategic directions are stated as:</p> <ul style="list-style-type: none"> • Support for business: start, grow and prosper; • Places for business: connected, accessible and diverse employment precincts; • Diversity in business: facilitating economic growth and prosperity through diversity, collaboration and innovation; and • Attracting business: investment, industry leaders, innovators and emerging talent. <p>Part of the economic vision is to encourage businesses to become more environmentally sustainable which impacts on the waste management services and the businesses involved with it.</p>
<p>Asset Management Policy</p>	<p>This is a guide to direct the sustainable management of the Council’s approximately \$2.1 billion assets to meet current and future needs and to provide best value services. Council managed assets include the delivery of services to the community such as</p>



	<p>waste services and the contracts which maintain them.</p> <p>The Asset Management Policy states an approach that balances ‘social, environmental and economic needs for the benefit of current and future generations’. This highlights the need for a more sustainable infrastructure which increases resource recovery and recycled materials.</p>
<p>Environmental Sustainability Strategy 2016 – 2026</p>	<p>This strategy is a 10-year strategy with a vision where ‘Monash is an innovative and environmentally sustainable garden city: resilient, diverse and thriving’, and the mission is ‘Making a difference through environmental sustainability commitment, expertise and leadership’. The strategy aims to help Monash achieve:</p> <ul style="list-style-type: none"> • Planning and implementing a sustainable future, • Protecting and enhancing our natural environment, • Mitigating and adapting to climate change, • Reducing waste, litter resource consumption and energy use, • Integrating and saving water, • Influencing behaviour; and • Demonstrating leadership and environmental innovation. <p>The objectives for the Waste and Resource Management priority are:</p> <ul style="list-style-type: none"> • Best practice waste and recycling collection and litter reduction services are delivered in a strategic municipal-wide approach • A strategic approach to reducing Council’s corporate waste and environmental impacts is established which recognises the waste hierarchy, life cycle analysis and has sustainable procurement integrity • Reduced community consumption of resources and improved recycling is achieved <p>The Council further commits itself to reducing its own waste and increase recycling efforts to play a leadership role for the community.</p>
<p>Monash Engagement Framework</p>	<p>The process for engaging with stakeholders and the community is outlined in the Monash Engagement Framework. It is designed to enable Council to make informed decisions reflective of the community’s views and values. The framework utilises approach developed by the International Association for Public Participation (IAP2) to make better decisions and build stronger community</p>



	<p>connections.</p> <p>The use of an engagement activity is based on four identified triggers;</p> <ul style="list-style-type: none"> • Council decisions and major developments; • Statutory consultation; • Generation of various Council plans and strategies; and • Market research <p>Monash Council’s engagements are guided by the principles of being inclusive, transparent, responsive and engaging with the community’s best interest at heart.</p>
Municipal Emergency Management Plan 2013	<p>To combat the economic, social and environmental impacts of emergencies, Monash has prepared the Municipal Emergency Management Plan (MEM). The report enables the municipality to cope with hazards such as fire and flooding. In the event of an emergency, the Waste Services Manager will work closely with the Public Health Coordinator to manage waste disposal.</p> <p>The Municipal Emergency Management Planning Committee meets twice a year and the MEM is reviewed annually or after it has been utilised after an emergency</p>

The following waste management aspects are identified in other plans and strategies:

- Assisting in the development of waste management plans for businesses;
- Information support on recycling facilities;
- Adoption of best practice waste and recycling collection and litter reduction services;
- Development of a strategic approach to reducing Council’s corporate waste and environmental impacts;
- Achieving reduced community consumption of resources and improved recycling;
- Reducing Council’s own waste and increase recycling efforts to play a leadership role for the community; and
- Provision of waste management services supporting Emergency Management.

1.2 Council's Waste Management Strategy Goals

Council's Waste Management Strategy has identified five goals that will underpin Council's commitment to Waste Management and the Community. They are:

- Goal 1: Increase waste diversion from landfill;
- Goal 2: Minimise waste generation through education;
- Goal 3: Leading the way;
- Goal 4: Serving our customers; and
- Goal 5: Pride in our city

Table 1-2 shows the key elements reviewed by the Waste Management Strategy (WMS).

Table 1-2 Key elements

Scope	Detail
Infrastructure	<ul style="list-style-type: none"> • Transfer Station / Resource Recovery centres; and • Pit upgrades including automated waste loading and separation; • Consolidation points.
Existing and proposed residential and Commercial collections	<ul style="list-style-type: none"> • Recyclables; • Organics; • Hard waste & prunings; • Residual waste (for landfill); • MUDs; and • Litter & recyclable street collections.
Services	<ul style="list-style-type: none"> • Litter management; • Dumped rubbish; • Street sweeping; • Engagement and education; • Customer service; and • Internal Services-Green waste disposal, High pressure cleaning of public places, drain cleaning and graffiti.
Data	<ul style="list-style-type: none"> • Waste stream quantities; • Population; • Trends; • Areas of concern; and

	<ul style="list-style-type: none"> • Areas of savings.
Challenges and opportunities	<ul style="list-style-type: none"> • Rate capping; • Organics; • MUDs; • Aged Residential units; • Commercial/Industrial properties (level of service); • Introduction/promotion of Waste Charges; • Maintain post closure of landfills; • Natural disasters; and • Climate change.
Waste Transfer Station services	<ul style="list-style-type: none"> • Accepted materials; • Waste recycling arrangements.
Strategic framework	<ul style="list-style-type: none"> • Council Plan, Environmental Sustainability Strategy 2015 and other policies; • Victorian Government; and • Commonwealth Government.
Innovation opportunities	<ul style="list-style-type: none"> • New technologies such as organics processing



1.3 Profile of Municipality

The following information is available from .id, The Population Experts ¹

Monash City Council is one of the most populous municipalities in the region and is home to 187,286 people (**Figure 1-3**). This is predicted to increase to 207,727 by 2036 (**Figure 1-4**). Since 2012, the population growth rate has been 1.4%.

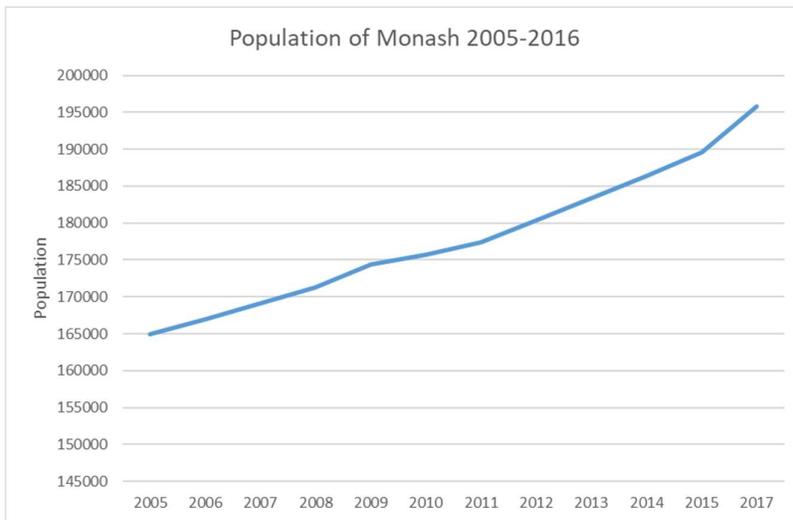


Figure 1-3 Population growth in Monash 2005-2016

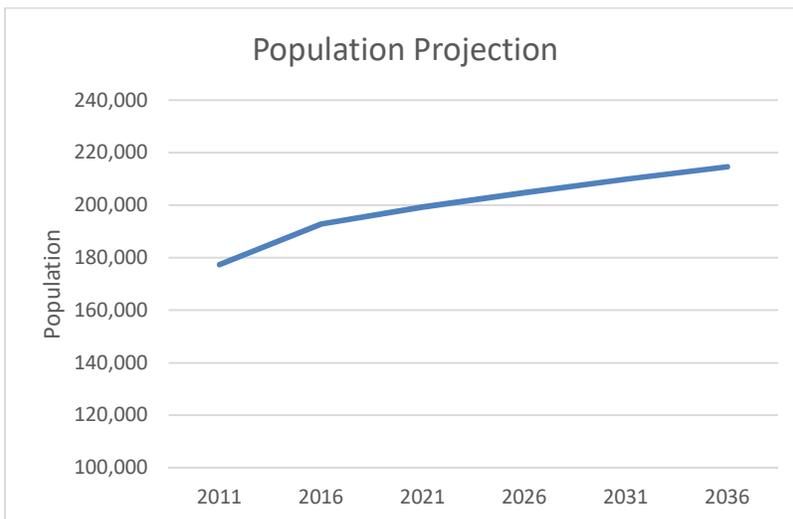


Figure 1-4 Monash population projections

There is pressure for residential expansion within the municipality which is driven by migrants from overseas and neighbouring Council areas, and from within Monash's existing residents. This

¹ .id The Population Experts (<http://profile.id.com.au/monash>) Accessed: December 2017

expansion will likely arise from redevelopment of existing residential areas through infill and medium density housing. Activity Centre growth in Monash will also provide a supply of new housing, predicted to be over 100 dwellings per year from 2026. The suburbs which are predicted to have the greatest increase in dwelling numbers are Clayton and Glen Waverley.

The Waste Management Strategy aims to plan for future population growth.	Goal 4
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The Monash municipality is very culturally diverse with over 41 languages spoken, and 46% of the population speaking a language other than English at home (Figure 1-5). The most frequently spoken languages other than English, are Mandarin, Greek, Cantonese and Italian. The median age of residents is 38, 2 years older than that of Greater Melbourne. There is also a significantly higher proportion of residents aged older than 64 years (17.2%) compared with Greater Melbourne (13.1%).

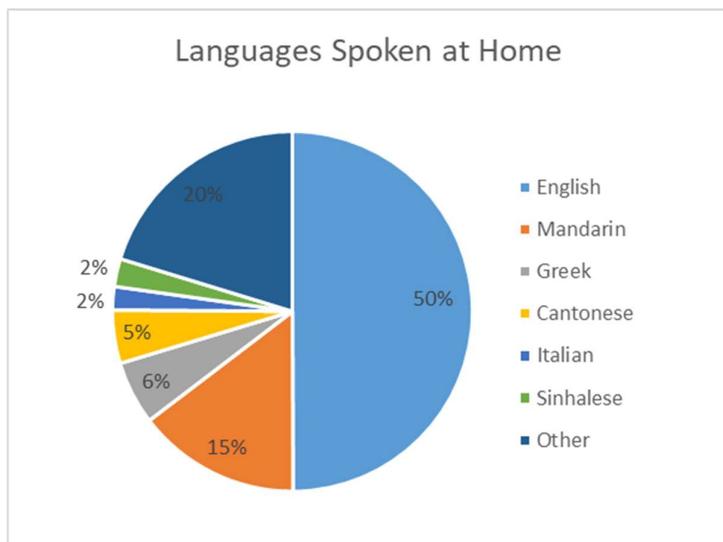


Figure 1-5 Languages spoken at home

The Waste Management Strategy aims to ensure that information is made available in multiple languages.	Goal 4
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The tenement profile of Monash is predominantly made up of residential buildings (90%) followed by, commercial tenements (6%) and industrial/primary production sites (4%). The occupied

residential buildings are largely separate houses (71%)² or medium density, such as semi-detached (12%) (Figure 1-6). Most these residential tenements are occupied by 2 people (32%) and single person households (20%).

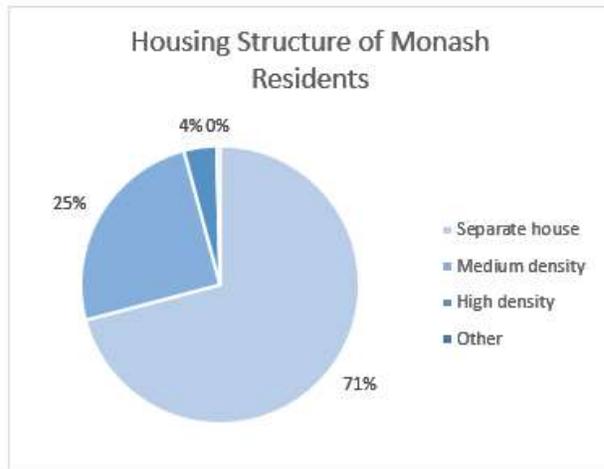


Figure 1-6 Housing Structure of Monash Residents

It is also predicted that the dynamics of household types will change with a significant increase of lone person households to 2036, see Figure 1-7. These compositions of housing structures, populations and households all have an impact on the future of Monash’s waste service and reflect a family centric community with an increase of single elderly people.

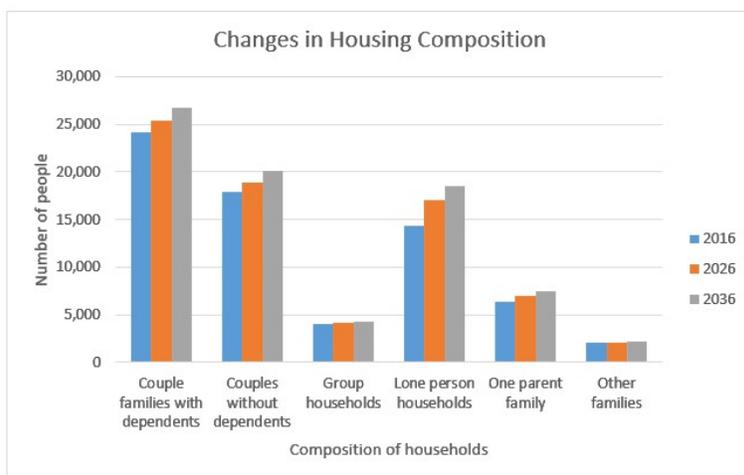


Figure 1-7 Changes in housing composition

² Profiles of Victorian Municipalities, 2011,

Legislative and Strategic Context

The City of Monash's Waste Strategy also needs to align with State Government policy and strategies. Initiatives at this level also have implications for aspects of operations at the local level. This section outlines the key documents and identifies aspects that need to be considered in Monash's Waste Management Strategy.

2.1 State Government Policy Directions

Victoria's 30-Year Infrastructure Strategy 2016

This strategy is aimed at providing a pathway for the future of Victoria through guiding changes to manage predicted population increases and densification issues. The report identifies improvements and goals for the state's infrastructure for the next thirty years.

Waste generation is predicted to increase due to population growth and economic activities such as construction of new buildings and infrastructure which places increasing pressure on landfills and resource recovery centres. The current generation of 12 million tonnes of waste by Victorians per year is expected to increase to 20 million tonnes by 2046. Victoria's landfills have sufficient capacity for a further 10 years, which is driving the push to reduce waste to landfill. Currently, 66% of total waste generated is disposed of at landfills.

Applicable to the WMS is Need 15 which is to 'Manage pressures on landfill and waste recovery facilities'. Recommendations made are:

- Incentivise waste minimisation and remove barriers to increasing waste recovery rates: improve recycled materials used in construction, accelerate actions to increase recovery of organic waste and determine appropriate pricing mechanisms for waste disposal fees; and
- Secure capacity for waste management: Provide greater guidance for landfills through planning provisions and minimise barriers to long term investment in waste management infrastructure.

Further considerations were also identified in the strategy:

- The success of waste minimisation and recovery is highly dependent on community engagement;
- Government has committed to banning E-Waste to landfill; and
- Using waste to generate energy as many European countries have adopted.

Key themes include: <ul style="list-style-type: none">• Increasing resource recovery;• Banning E-Waste to landfill; and• Moving from landfills to alternative waste technology (AWT).	Goal 1 Goal 2 Goal 3
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State-wide Waste and Resource Recovery Infrastructure Plan (SWRRIP) 2015

The SWRRIP expresses the four following goals:

- Landfills will only be for receiving and treating waste streams from which all materials that can be viably recovered have been extracted;
- Materials are made available to the resource recovery market through aggregation and consolidation of volumes to create viability in recovering valuable resources from waste;
- Waste and resource recovery facilities including landfills are established and managed over their lifetime to provide best economic, community, environment and public health outcomes for local communities and the state and ensure their impacts are not disproportionately felt across communities; and
- Targeted information provides the evidence base to inform integrated state-wide waste and resource recovery infrastructure planning and investment at the state, regional and local levels by industry, local government agencies and the broader communities.

The concept of ‘hubs and spokes’ is introduced in this document in relation to the waste management system. Hubs are a facility or group of facilities which manage waste and material streams and the spokes are the sequence of activities that move materials and waste from generators to and from hubs. Monash is part of the Metropolitan Waste and Resource Recovery Group (MWRRG) and not considered to be a location for a hub of state importance.

<p>Planning considerations relevant to Monash municipality:</p> <ul style="list-style-type: none"> • Increasing resource recovery in Multi-Unit Developments(MUDs); • Closure of landfills in the Clayton/Kingston and Mornington Peninsula areas; • Increasing recovery from commercial & industrial (C&I) businesses; and • Increasing recovery at RRC/TCs. 	<p>Goal 1 Goal 4</p>
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Metropolitan Implementation Plan 2016

The Metropolitan Implementation Plan (the Plan) is a roadmap designed to shape the waste and resource recovery infrastructure of the greater Melbourne region for the next 30 years. The main priorities of the plan are to reduce the need for landfilling by increasing resource recovery, and by making use of alternative technologies. To achieve this, four strategic objectives and their actions are identified as:

- Reduce waste sent to landfill: Establish infrastructure to recover more resources from municipal waste and create opportunities to aggregate commercial waste streams. Also, facilitate the growth of RRC/TS's with the metro region;
- Increase organic waste recovered: by building the metro organics recovery and processing network;

- Deliver community, environmental and economic benefits: Encourage best practice operations within the waste network and encourage the community and other stakeholders in decision making; and
- Plan for Melbourne’s growing population: Facilitate planning for the future of the metropolitan waste system and ensure landfill contingency capacity in emergency events. Review the plan in 2019 to assess whether the new infrastructure will be delivered within the timeframe.

<p>The Waste Management Strategy facilitates Monash’s involvement with the metropolitan organics recovery and processing network. Key initiatives under the Plan include:</p> <ul style="list-style-type: none"> • Collective contracting for disposal; • Food Organics Green Organics (FOGO); and • Support for Alternative Waste Treatment (AWT). 	<p>Goal 1 Goal 3 Goal 4</p>
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Getting Full Value – Victorian Waste and Resource Recovery Policy 2013

An integrated policy which presents a Victorian vision and approach to resource recovery that is sustainable, productive and minimises overall costs. The vision is set for 30-years with policy priorities for the next 10-years.

<p>Monash’s waste strategy aims to be consistent with Victorian Government’s strategic directions</p>	<p>Goal 4</p>
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Investment Facilitation Framework / Participate Sustainability

Describes the barriers to investment in Victoria’s waste and resource recovery infrastructure with a goal to facilitate or attract such investment to the industry. The Waste and Resource Recovery (WRR) industry is not as visible as other infrastructure projects which limits investment, as does the lack of awareness for investment opportunities and of the procurement, planning and approvals process. Access to data is also a limitation to investment, as available data isn’t real time and commercial contracts often do not show Commercial and Industrial (C&I) and Construction and Demolition (C&D) data. Data on waste flows and quality of feedstock also influences investment decisions and needs to be more available.

A coordinated approach to government interaction with investors is required to improve communication consistency. *Getting Full Value*³ promotes the use of new technology in the industry, however there is increased risk for investors in new and unproved technology. Demand

³ Victorian Government 2013. *Getting Full Value*. DEPI ISBN 978-1-74287-799-0

for reprocessed waste needs to be generated to minimise the risk of stockpiling and reduced revenue.

Government procurement of WRR infrastructure and planning to secure necessary land to develop this infrastructure is also a driver to increase investment.

Support for investment in waste resource recovery and AWT infrastructure is available	Goal 1 Goal 3
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Collaborative Procurement Guidelines for Regional Waste and Resource Recovery Groups 2015

This framework encourages and facilitates local councils to better work together to aggregate and consolidate waste and material streams and to develop their WRR infrastructure for social, economic and environmental benefits. This collaborative procurement, where two or more councils work together, is an effective way to meet the increasing demands of the waste system, and is overseen by WRRGs. Procurement can be initiated either by local councils or by the WRRG. Collaboration should be considered for new contracts and those nearing expiry and within council documents such as the business plan.

Council will assess opportunities in collaborative procurement to increase value for money in the waste services provided	Goal 4
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Victorian Market Development Strategy for Recovered Resources 2016

This document identifies that the creation and expansion of sustainable WRR markets is critical for the success of the waste industry in Victoria. It also identifies where the Vic Government can stimulate production and reduce barriers to encourage market growth. This includes collaborative procurement, investment facilitation, product stewardship and specifications, and land use planning for infrastructure.

The market is driven by a ‘push and pull’ effect where the desire to reduce waste to landfill is pushing resource recovery and the pull is generated by consumer and industry demand. There is an imbalance between these forces and in the supply and demand which reduces the viability of industries. Priority materials, which are the focus of the market development, are organics, rubber (tyres), E-waste, concrete and bricks, flexible plastics and glass fines.

The Waste Management Strategy facilitates the creation or expansion of WRR markets where appropriate, especially in the organics market.	Goal 1 Goal 3
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Victorian Waste Education Strategy 2016

This strategy aims to increase awareness of the impacts of waste management in a state-wide and coordinated approach. Outcomes of the strategy are to ensure well-informed industry, businesses and households and understanding of how important waste management and resource recovery is through practical action by individuals.

The strategic directions from 2016 to 2026 are to:

- Increase the Victorian community and business perception of waste management as an essential service;
- Increase community awareness of waste and support and encourage waste avoidance;
- Improve resource recovery and reduce contamination;
- Reduce litter and illegal dumping;
- Support waste and resource recovery education for schools; and
- Strengthen Victoria's waste and resource recovery education capabilities.

The guiding principles which underpin the strategy's approach are environmental justice, formation of partnerships, transparency, to lead by example, research and innovation and to support and facilitate others. SV will coordinate the implementation of the strategy and is also responsible for monitoring and evaluating the success.

The Waste Management Strategy will place a strong focus on community education and consultation to achieve goals/outcomes.	Goal 2 Goal 4 Goal 5
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Victorian Organics Resource Recovery Strategy 2015

The Organics Resource Recovery Strategy is a framework that aims to eliminate the risks of organics management and to ensure that organics contribute to climate change mitigation and that more organic waste is pulled from the waste stream by diversified markets and products.

A barrier which had limited the success of the organics recovery industry is a lack of a strong and sustainable market for organic materials. High contamination levels in the feedstock, large transport distances and a lack information on the benefits of recycled organic products has led to this barrier. By working with industry and end markets and providing information, the strategic outcome in 5 to 10 years should be an increase in quality and demand for organic materials and greater understanding of recycled organics and the benefits which they present.

The Council works with stakeholders to increase organics recovery within the Monash municipality.	Goal 1 Goal 3
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Plan Melbourne: Metropolitan Planning Strategy 2014

A Melbourne wide strategy to better plan water, energy and waste management systems to create a sustainable city. This has a key direction to ensure infrastructure for waste management is secure and to assess opportunities for new waste facilities. This strategy also aims to tackle the logistical issues and infrastructure around MUDs and their waste needs.

Monash's waste strategy aims to be consistent with the State Planning Strategy.	Goal 4 Goal 5
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2.2 Legislation

Table 2-1 shows the relevant legislation for the WMS.

Table 2-1 Legislation

Legislation	Description
National Legislation	
Product Stewardship Act 2011	Provides the framework for managing the impacts of different materials and products throughout their lifecycle, including producing, selling, using and disposal. Product stewardship promotes actions like recycling and the design of products with less materials and resources required for manufacture. The Australian Government introduced this act in 2011 as part of their commitment under the National Waste Policy and in Victoria this has led to a number of programs such as ByteBack (computers), BatteryBack (batteries), and PaintBack (paint) for product stewardship. A review of this document is imminent.
State Legislation	
Local Government Act 1989	The main legislative instrument for all Victorian Councils which guides their operation and purpose and provides the legal framework for the administration and establishment of Councils. The Act also provides a legislative framework which holds Councils accountable to their communities for functional performance and the use of power and resources.
Local Government (Financial Assistance) Act 1995	The act provides the Financial Assistance Grant Programme which allows local governments to spend the grants according to local priorities.

Environment Protection Act 1970	This is the overarching governing legislation for waste and resource recovery in Victoria. The act has a basic philosophy to prevent pollution and damage to the environment through sustainability and holistic management. The Act establishes the Waste Hierarchy. The creation of the Environment Protection Authority arose from this act, which also sets out the functions, duties and responsibilities for the authority. One such role is the regulation of waste discharge activities and recommending waste management policies.
Public Health and Wellbeing Act 2008	The purpose of this act is to promote and protect the public health and wellbeing in Victoria. Public health includes the absence of disease, injuries, disability and illness in a community.
Local Government (Planning and Reporting) Regulations 2014	These regulations are created under the Victorian Local Government Act and prescribe the content and information to be included in Council documents such as budgets, annual reports, Council Plans and the Strategic Resource Plan.
Victoria Grants Commission Act 1976	This is the state legislation that governs the operations of the Victoria Grants Commission (VGC). The primary function of the VGC is to allocate grants provided by the government to councils of Victoria.
Climate Change Act 2017	This act replaces the Climate Change Act of 2010 and is largely directed towards emissions reductions and savings, which is relevant in the waste context for transport distances for waste disposal.

The Waste Management Strategy aims to comply with relevant state and federal legislation and policies.	Goal 1
	Goal 2
	Goal 4

Sources of Council's Waste

Monash provides residents with a standard 3 bin service consisting of a weekly residual collection, and fortnightly recycling and green waste collections. Residents also receive an annual blanket hard waste collection.

The actual number of bins distributed to the community for residual waste collection is 68,281 (**Figure 3-1**). This is increasing, along with recycling and organics bins.

The number of recorded 'bin lifts', which is the term for the number of times bins are emptied by the contractor, and calculated monthly is also rising (**Figure 3-2**). This is the method by which the Council is charged by the contractor.

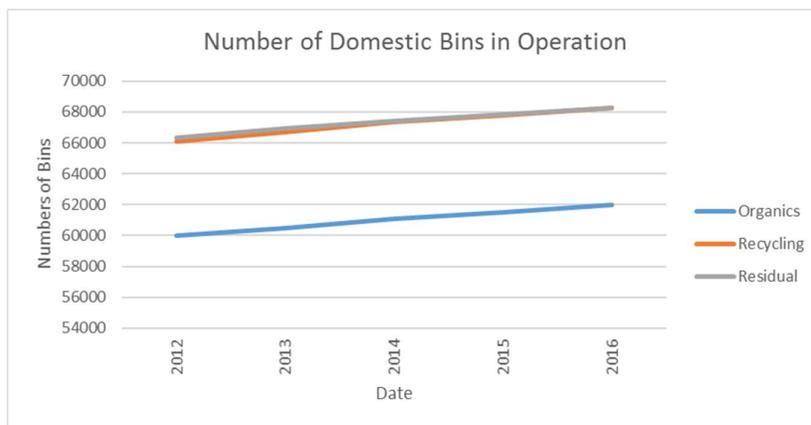


Figure 3-1 Actual Numbers of Bins in Operation

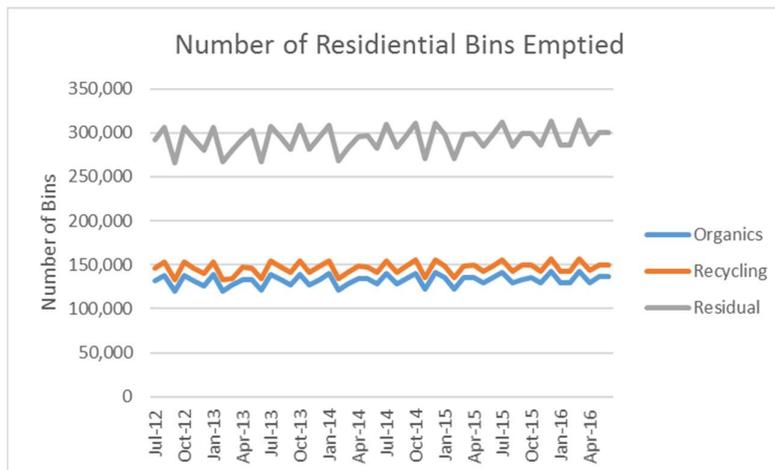


Figure 3-2 Number of Times Residential Bins Were Emptied

3.1 Household Waste Services

3.1.1 Contracts

Household waste services operate under different contracts, as shown in **Table 3-1**. Monash values thorough Key Performance Indicators in its contract management to ensure maximum resource recovery.

Table 3-1 Waste Service Contracts

Service	Contractor	Contract Number	Commencement Date	Period
Domestic and Commercial Garbage	SOLO Resource Recovery	CF 2010 122A	1 April 2011	7+1+1 years. April 2020 Assumed food waste in green waste collection for next contract
Domestic and Commercial Garbage Disposal	Wyndham Council (Wests Road Landfill) from Dec 2015		May 2015	6 years
Recycling Collection	SOLO Resource Recovery	CF 2010 122B	1 April 2011	7+1+1 years
Recycling Disposal	VISY Recycling	CF 2010 122D	1 April 2011	7+1+1 years
Green Waste Collection	SOLO Resource Recovery	CF 2010 122D	1 April 2011	7+1+1 years
Organics Disposal	Sacyr, Veolia and Cleanaway MWRRG Contract		1 April 2017	15 years + 5 years
Annual Hard Waste Collection	WM Waste Management	CF 2014049	(August-September) 2014/15	3+1+1 years
Annual Hard Waste Disposal	SUEZ			
Manufacture and Supply of Bins and Spare Parts	Trident Plastics Pty Ltd	CF 2015 093	April 2015	2+1 years

3.1.2 Kerbside Residual Waste Services

Monash Council currently provides a 120L waste bin for residual waste. There has been a 1.8% increase from July 2012 to September 2016 (Figure 3-3).

Disposal cost for residual waste has dropped since November 2015 due to closure of Clayton Regional Landfill and lower rates at Wyndham Landfill. Collection costs have been increasing since 2013 and were \$2,992,206 for the 2015/16 financial year (Figure 3-4).

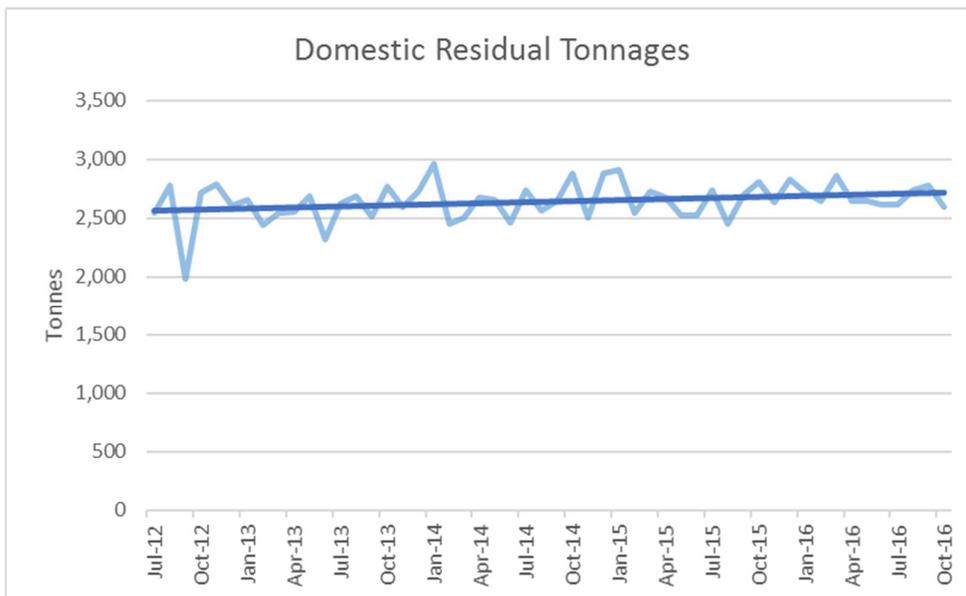


Figure 3-3 Domestic Residual Tonnages

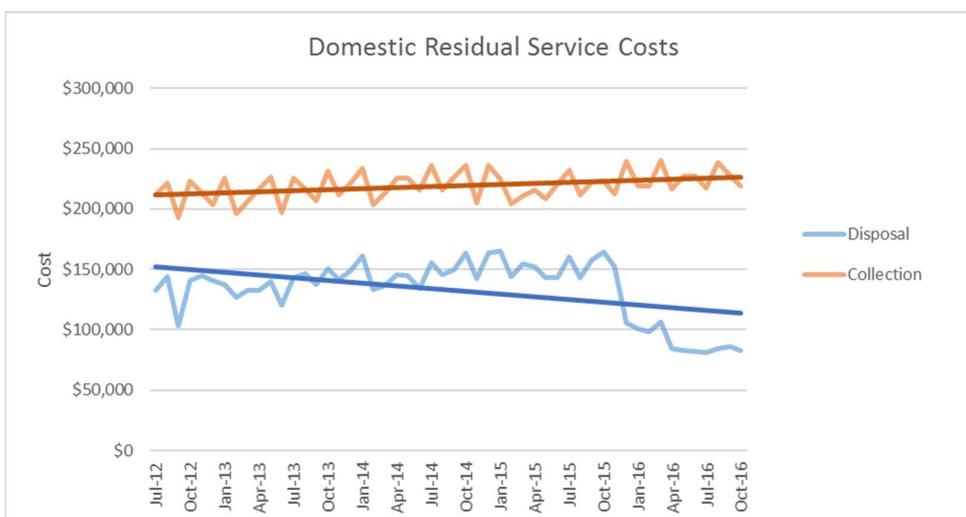


Figure 3-4 Domestic Residual Service Costs

Collection costs since 2012 have increased by 3.5%, which is more than the increase in tonnage volume (1.8%) and double the population growth rate (1.4%). This is likely to reflect the greater distance to landfill.

Future considerations:

- Reduce residual waste tonnages with implementation of FOGO;
- Collections will become fortnightly;
- More Multi Unit Developments;
- Increased densification;
- Increased disposal costs;
- Potential introduction of weight-based billing; and
- Community recognition of increasing need for waste diversion from landfill.

The Waste Management Strategy aims to maximise resource recovery to minimise the volume of domestic residual waste disposed to landfill.	Goal 1
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3.1.3 Kerbside Recycling Collection Service

Council provides a 240L bin for kerbside recycling and a fortnightly collection service. Trends in light-weight packaging and a reduction in print media are reducing the tonnes collected (**Figure 3-5**). Council receives an income for recycling disposal through a contract with VISY based on tonnages collected (**Figure 3-6**), consequently income is decreasing. Contamination rates within recycling bins are below 4%, with the main contaminants being plastic bags (soft plastics).

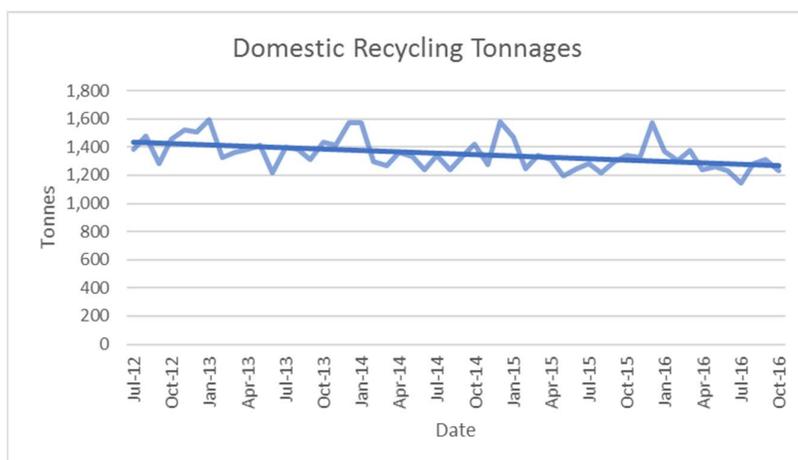


Figure 3-5 Domestic Recycling Tonnages

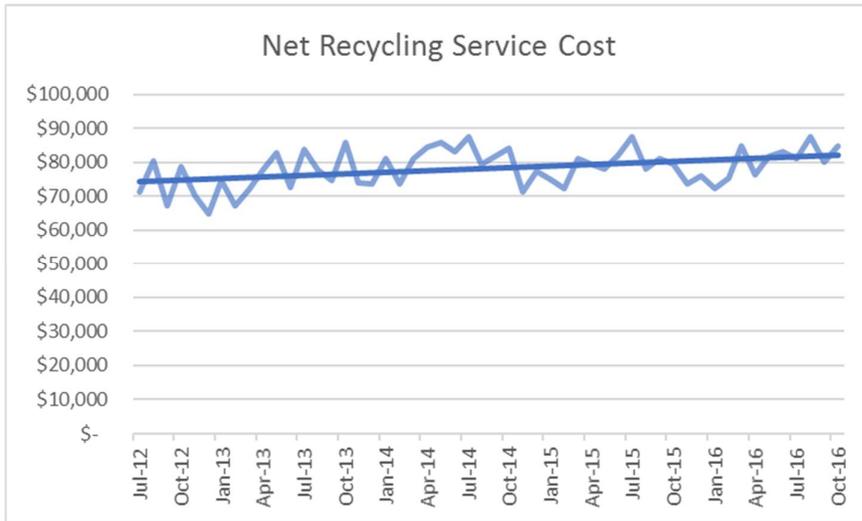


Figure 3-6 Net Domestic Recycling Cost

Future considerations:

- Light weight packaging materials;
- Reduction in print media will continue; and
- Recycling revenue may decrease further if container deposit scheme is introduced.

The Waste Management Strategy aims to increase resource recovery of recyclable materials to reduce waste sent to landfill and increase service value/income.	Goal 1
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3.1.4 Kerbside Green Waste Collection Service

Monash Council provides a 240L bin for green waste to residences and collection runs fortnightly alternating with the recycling collection. Green waste fluctuates more than other waste types due to seasonal variations. **Figure 3-7** shows that overall tonnages are slightly increasing with time.

There is a difference between the number of recycling bins and organic green waste bins within the Monash residential service. Currently, there are 14,031 more recycling bins than the organics bins and an average of 12,279 more since 2006.

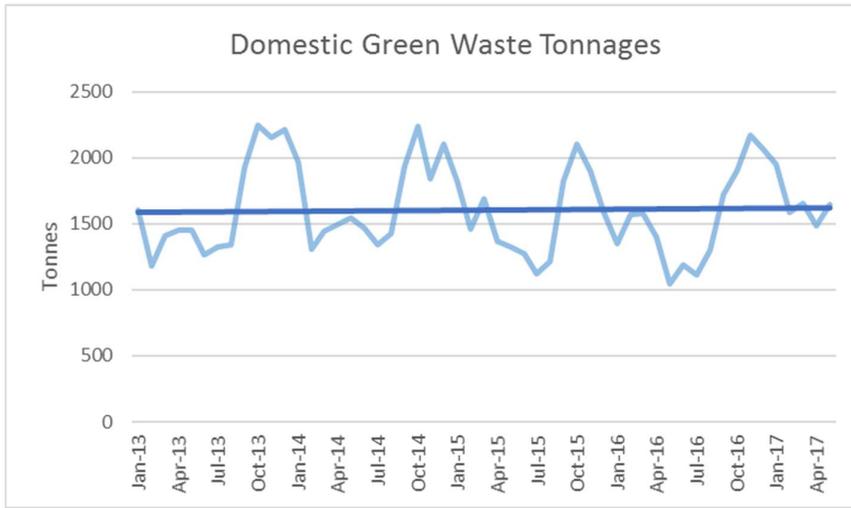


Figure 3-7 Domestic Green Waste Tonnages



Figure 3-8 Domestic green waste costs

Future considerations:

- Will increase with introduction of FOGO; and
- Collection frequency will become weekly.

The Waste Management Strategy aims to manage communications with community during the implementation of FOGO and the changes to collections.

Goal 1
Goal 4

3.1.5 Annual Hard Waste

Monash Council undertakes one annual hard waste collection between August and September each year. Disposal of these materials is described in **Table 3-2**. Data on hard rubbish collection tonnages and composition is provided by the contractor in an annual report⁴. The average amount of hard waste tonnes collected each year is increasing, with 5,030 tonnes recorded for 2016 (**Figure 3-9**). Scrap metal tonnage increased by 152.9% between 2015 and 2016. The average weight of hard rubbish collected per participating tenement is also increasing with each year and was 71.6kgs in 2015/16 (**Figure 3-10**Figure).

Table 3-2 Hard Waste Disposal

Waste Type	Destination	Recycler/Disposers Name
Scrap metal	Noble Park	Sims Metal
Green Waste	Victory Rd, Clayton	Cleanaway
CFC containing appliances	Knox Transfer Station	Knox City Council & WM Waste Management Services
Residual Waste	Hallam Rd	SUEZ
E-Waste	Notting Hill Waste Transfer Station	Monash City Council & Techcollect
Mattresses	Notting Hill Waste Transfer Station	Tic Group
E-Waste	Notting Hill Waste Transfer Station	Stewardship Scheme
Textiles, Mobile phones, Ink cartridges	Notting Hill Waste Transfer Station	Mobile muster, Close the Loop

⁴ WM Waste Management Services, Annual Collection of Green Organics (Prunings) and Hard Rubbish for Monash City Council, 2016

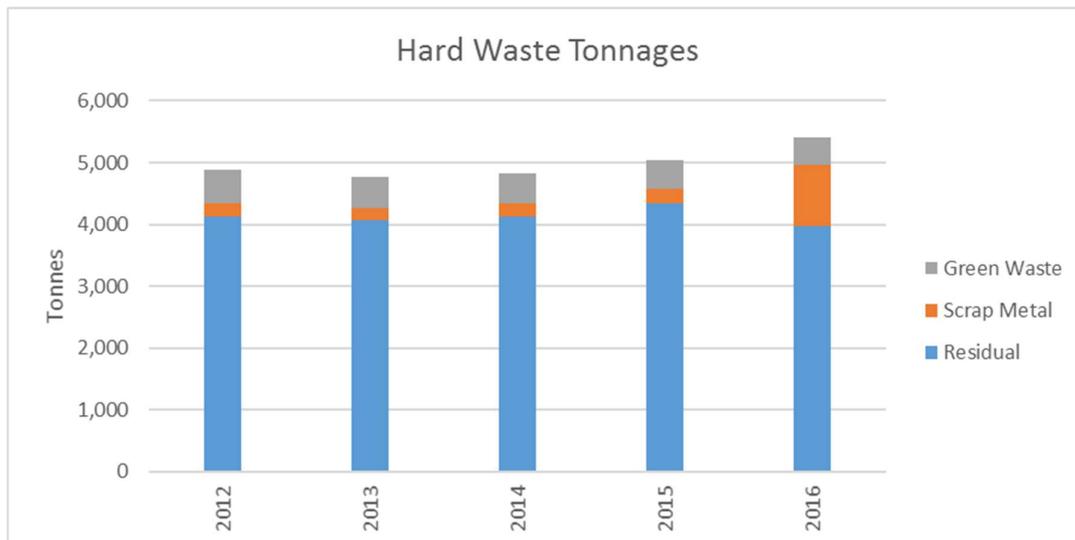


Figure 3-9 Hard Waste Tonnages

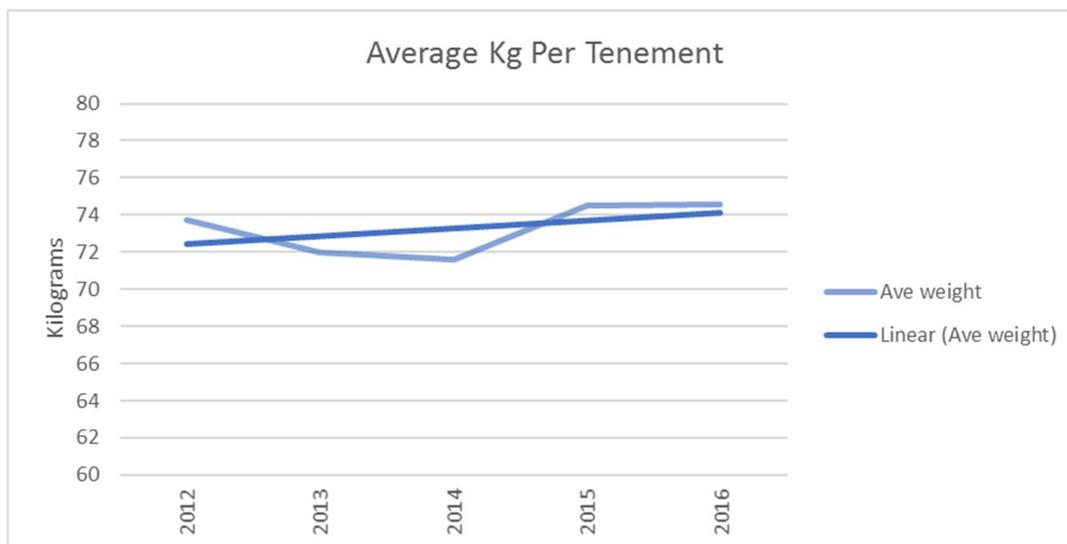


Figure 3-10 Average weight of hard waste per tenement

The cost of each annual hard waste collection, provided by Council, is increasing and was approximately \$1,030,000 in 2016 (**Figure 3-11**). Similarly, disposal rates show an increasing trend because of tonnages collected, levy rates and the changing composition of the hard waste. Disposal costs fluctuate according to the composition, the more recyclables, particularly metals, which are present, the lower the volume disposed and hence disposal costs.

Of the 71,078 residential tenements in Monash, it is estimated that there is between 75% and 80% uptake of for the service.

The Waste Management Strategy aims to maximise waste and resource recovery in the hard waste collection service to minimise the volume of waste sent to landfill and costs.

Goal 1
Goal 4

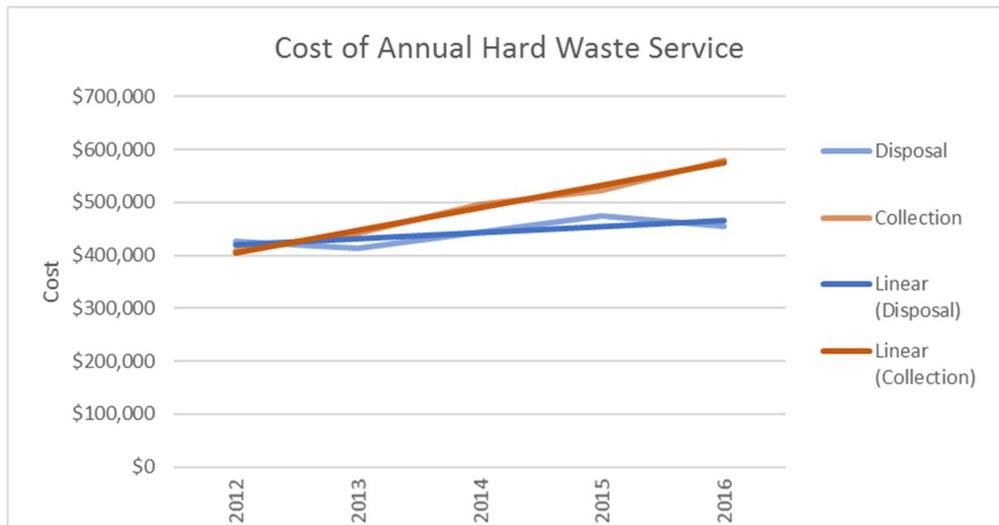


Figure 3-11 Cost of Annual Hard Waste Service

The percentage of recycled hard waste shows an increasing trend since 2004. The most recent collection in 2016 however increased recycled material by 5.5% (Figure 3-12). The most recycled material in 2016 was scrap metal, 10.9% in 2016, followed by green waste, 8.8%.

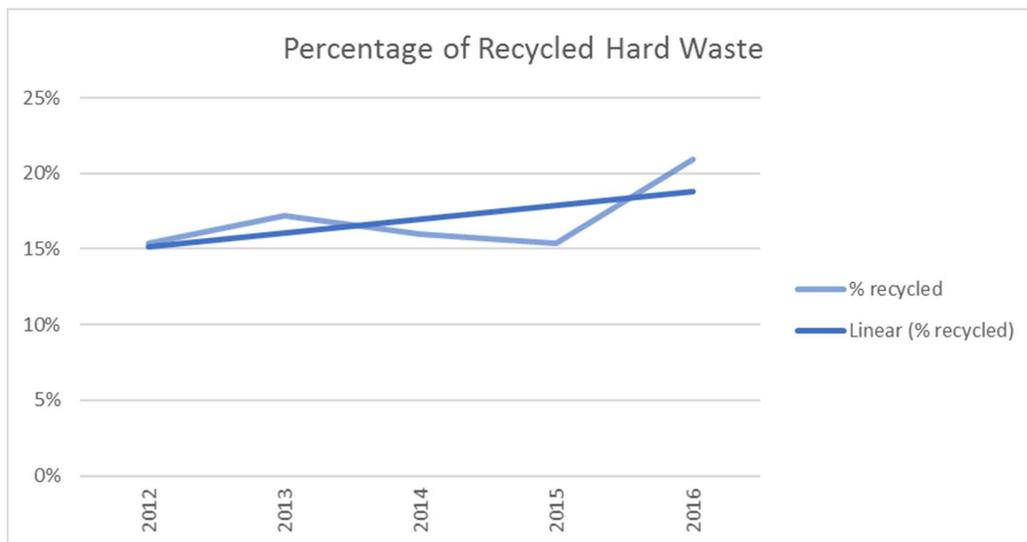


Figure 3-12 Percentage of Recycled Hard Waste

The Waste Management Strategy aims to maximise resource recovery in the hard waste collections to reduce waste sent to landfill

Goal 1

3.1.6 Waste Stream Evaluation

The total waste collected through the kerbside services (residual, recyclables and green waste) for the 2015/16 financial year was 66,087 tonnes and of this waste 49% went to landfill (**Figure 3-13**) and 51% was recovered.

The main materials which make up municipal solid waste (MSW) are paper and cardboard, food waste and plastics⁵, and this is similar for Monash residents. **Figure 3-13** shows the annual composition of Monash’s 3 bin waste stream. The average annual waste generated per tenement in Monash is 883kgs which is residual, recyclable and green waste. An additional average of 71.6kgs is collected through the hard rubbish for each participating tenement.

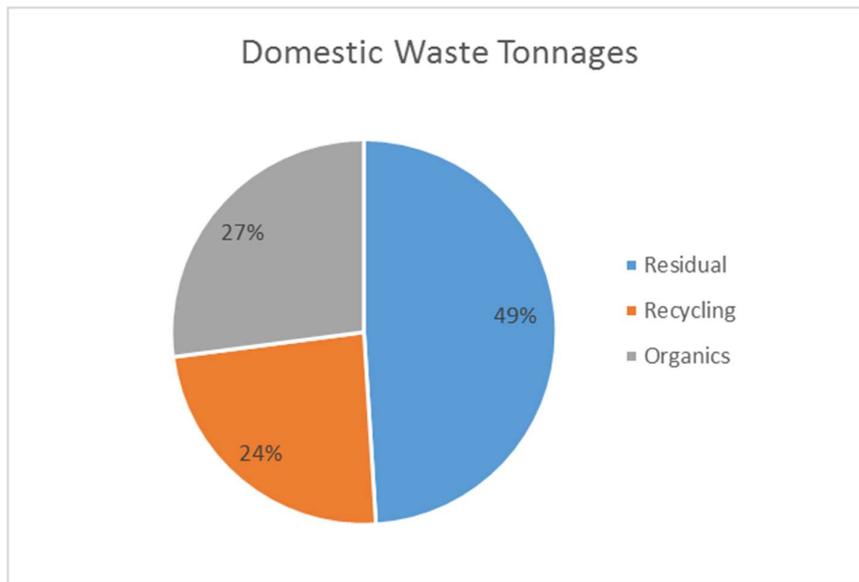


Figure 3-13 Domestic Waste Tonnages 2015/16

The Waste Management Strategy aims to maximise recovery of recyclable materials to improve service costs

Goal 1

Goal 4

⁵ Sustainability Victoria, Victoria’s Waste & Resource Recovery Infrastructure Investment Prospectus, 2015

3.2 Commercial Waste Services

Commercial properties have a 240L bin for waste collection. There is a difference between the services provided for commercial collections as the frequency is determined by the location of the property. The former City of Waverley area receives two collection services per week, and the former City of Oakleigh receives one collection per week. Often, businesses opt to pay for a private service for their waste collection as Council provisions do not meet their requirements.

A recycling service is available at an additional cost to commercial properties which are within or adjacent to residential areas. Properties outside of these areas are encouraged to take their recyclables to the transfer station or organise a private service.

Costs for commercial waste show different trends, with collection costs increasing and disposal costs reducing (Figure 3-14). The main cause for the reduction in disposal costs is the change in landfill sites in November 2015.

There are currently 4,726 commercial tenements and 2,777 industrial/primary production tenements within the Monash Municipality, totalling 7,503 tenements. According to Monash bin counts, there are 6,951 commercial bins in operation, leaving 552 businesses not receiving the Council's waste service. Furthermore, businesses may have a combination of private and Council services.

The number of weekly bin services for residual waste has declined since 2013. This suggests that the weekly collection service is not sufficient for commercial tenements and so they are opting for a private waste service. However, for the twice weekly service in Waverley, the bin numbers are increasing, as are the numbers of recycling bins. There are also significantly less recycling bins (484) in use than residual bins (6,951).

Visy currently provide large skips for cardboard collection which goes some way towards compensating for the lack of kerbside recycling.

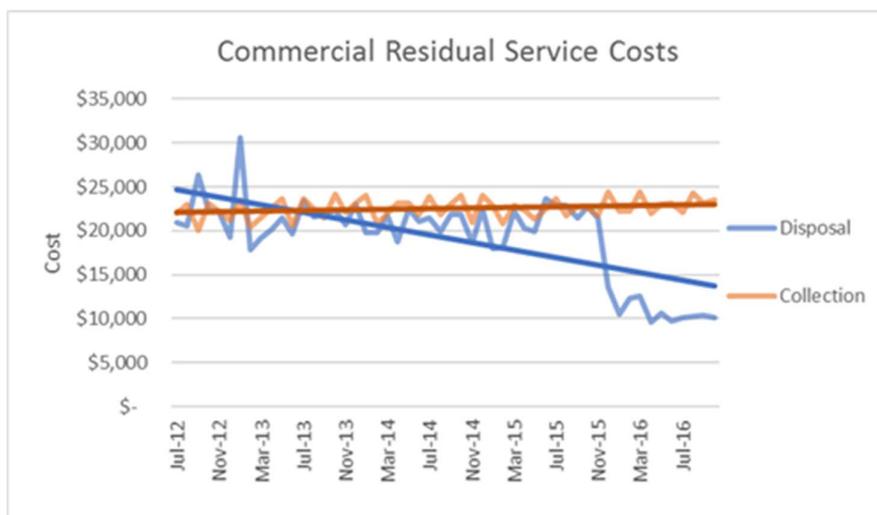


Figure 3-14 Commercial Residual Waste Costs

The Waste Management Strategy aims to optimise ways to provide waste services to commercial properties and equalise the service across the municipality.

The Waste Management Strategy aims to maximise resource recovery of recyclable materials from collections to commercial businesses to reduce waste sent to landfill.

Goal 1

Goal 4



3.3 Waste Transfer Station

The Monash Waste Transfer and Recycling Station is located at 380 Ferntree Gully Rd, Notting Hill and is open 7 days a week. Materials which are accepted at no charge are:

- TVs and computers;
- Household paint;
- Paper and cardboard;
- Polystyrene (for amounts under ½ m³);
- Car oil (up to 30L);
- Fluorescent tubes;
- CFL globes;
- Car and alkaline batteries;
- Engine blocks (free of oil);
- Mobile phones and mobile phone batteries; and
- X-ray film.

The composition of the waste received at the transfer station is mainly general waste (47%) followed by 29% organics and 13% concrete/bricks, see **Figure 3-15**.

Waste is brought to the Transfer Station by residents, Council’s contractors and private contractors. The Council receives a range of different waste types such as mattresses which, through an agreement with Tic Group, have no cost for disposal. The concrete and bricks are taken to a recycling facility and used as road fill base which is free of charge. Under the Federal Government’s National Television and Computer Recycling Scheme, E-Waste is managed and disposed of free of charge by TechCollect, a not-for-profit E-waste recycling service.

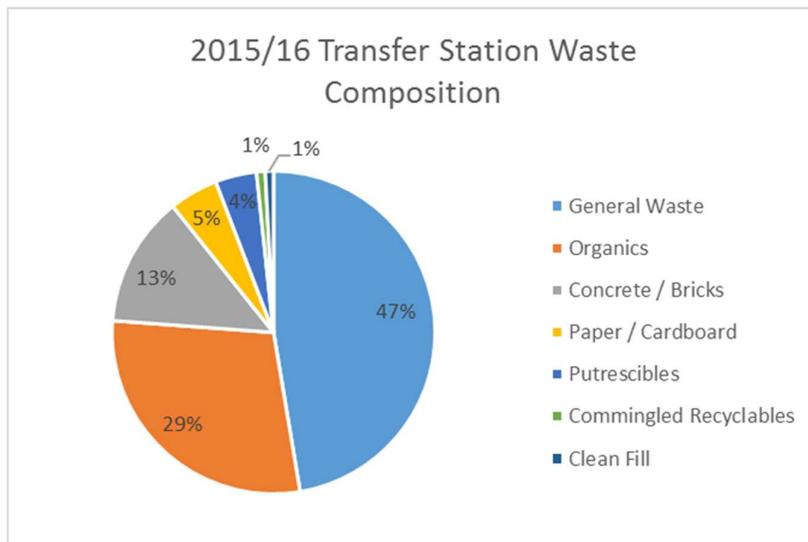


Figure 3-15 2015/16 Transfer Station Waste Composition

Tonnages of different wastes fluctuate at the transfer station, **Figure 3-16**, but there is a general increase of organics and general waste which is dependent on residents bringing in these tonnages. Contractor works and residual waste fluctuate.

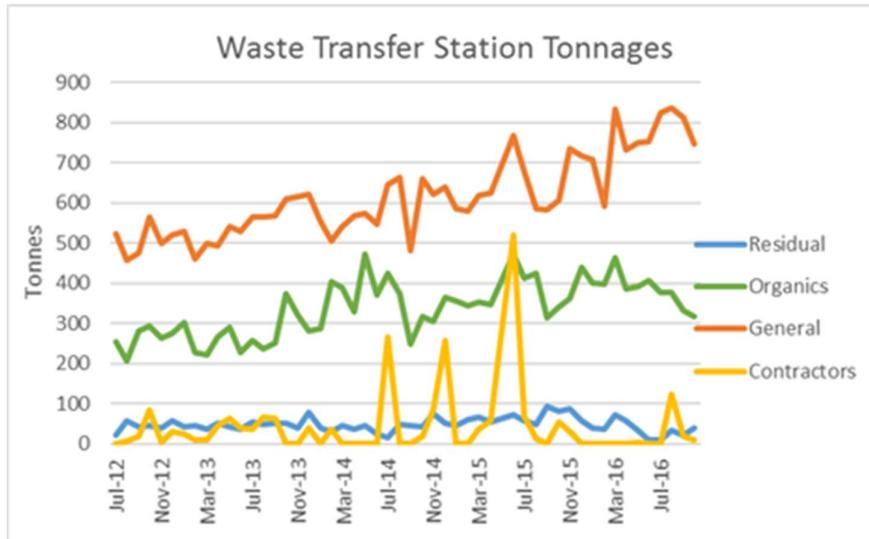


Figure 3-16 Waste Transfer Station Tonnages

<p>The Waste Management Strategy aims to maximise resource recovery at the Waste Transfer Station to reduce waste sent to landfill.</p>	<p>Goal 1</p>
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Future Trends

4.1 Waste Trends

Projections have been calculated for the next eight years for a business as usual scenario for the costs and tonnages of the waste services. **Figure 4-1** shows the tonnages collected with current services and the assumed introduction of FOGO in 2019/20.

The main factors which will be influencing Monash's waste expenditure in future years are:

- Expected higher rates for 2022 new garbage disposal contract;
- 2019/20 green waste disposal contract rates expected to increase with new technologies for treatment of food waste;
- EPA levy increases;
- Mattress disposal costs at an additional \$150,000 per annum;
- Cost of fuel increases; and
- CPI increases.

The major change for waste tonnages is the introduction of food organics recycling which will reduce the amount of residual waste and increase organics recovery. This is expected to be introduced across the Metro region in the 2019/20 financial year.

The income for recycling disposal is predicted to reduce in the coming years which reflects the reduction in tonnages collected due to light weight packaging and reduction in print media. All other collection and disposal costs are projected to increase (**Figure 4-2**). In 2025, the total cost for the waste service is predicted to be approximately 68% higher than 2015/16 costs. This is inclusive of taxes and levies.

Currently, within Council's hard waste contracts, mattresses are accepted and disposed of for free. This arrangement is due to expire in 2018 and this will see Council having to pay for mattress disposal which increases the cost projections. It is estimated that approximately 6,000 mattresses will be disposed of per year at a cost of \$25 each which equates to an extra \$150,000 a year.



Figure 4-1 Projected Waste Tonnages



Figure 4-2 Predicted cost for Waste Disposal and Collection

The Waste Management Strategy aims to reduce waste sent to landfill to minimise the costs of waste disposal to the community.	Goal 1
	Goal 4

Challenges

Monash City Council faces challenges in the waste services which it provides:

5.1 Increase in Residential Densification

Densification is a term used by planners, designers, developers and theorists to describe the increasing density of people living in urban areas. This densification puts pressure on waste management, infrastructure and operations. According to the 2011 census, Monash has a density of 20.67 persons per hectare, which is much higher than the average for Greater Melbourne (3.98). The Monash suburbs with the highest population density were:

- Hughesdale (34.91pp/ha);
- Oakleigh East – Huntingdale (27pp/ha);
- Chadstone (24.87pp/ha); and
- Ashwood – Burwood (23.25pp/ha).

In 2015, Monash’s density increased to 22.99 people per hectare. In addition to increased generation, densification also creates challenges for waste collection, particularly MUDs.

The Waste Management Strategy aims to ensure collection efficiency.	Goal 4 Goal 5
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5.2 Expectation of Increasing Diversion from Landfill

State documents like the SWRRIP and Metropolitan Implementation Plan express aims to reduce the amount of waste going to landfills, but there are barriers to achieving this. General trend over the last 20 years has been increasing public opposition to new landfills, however the cost and complexity of approvals and infrastructure are restrictive to the development of alternatives to landfill. Other than Hallam Rd and Taylors Rd Landfills, there are no residual waste treatment facilities which operate in in the south eastern and eastern metropolitan areas to accept large volumes of commercial and municipal waste. Alternatives to landfill for residual waste are not yet available, but may be within the term of the strategy.

New or improved RRC/TSs are required in all regions of metropolitan Melbourne to manage the growth in waste recovery. There are challenges in identifying and securing suitable land for siting infrastructure. Closures of landfills in the south east of Melbourne will apply pressure on resource diversion and recovery and this is increased by the lack of new landfills scheduled as well.

The Waste Management Strategy aims to facilitate improvements to waste services infrastructure and plan for future requirements.	Goal 3 Goal 4
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5.3 Substances with Specific Disposal Requirements

Problem materials are those which are dangerous to our health and/or environment and usually have specific disposal needs. Hazardous wastes must be classified (Category A, B or C) and sent to specially licensed landfills.

Batteries are a problem material as they are made up of heavy metals and toxic materials such as mercury, lead acid and nickel. Approximately 97%⁶ of batteries end up in landfills. Furthermore, it is possible for lithium ion batteries to explode which causes more issues with their disposal and management. The challenge for batteries is making diversion convenient.

Asbestos remains a hazardous waste which poses problems for disposal and management. Asbestos must be correctly packaged and labelled and handled with care, and can only be disposed of at facilities licensed by the EPA to accept this material. The closest disposal site for domestic asbestos is Wollert (accepts domestic and commercial) and the closest disposal site for commercial asbestos is Lyndhurst.

Chemicals and toxic liquid wastes such as paint, cleaners and pesticides cannot be disposed of in regular waste and recycling bins, they must be disposed of separately at a chemical drop-off. Their disposal poses a threat to the environment and humans through handling and so their management is an issue. *Detox Your Home* is a collection service for households which is funded by the landfill levy and delivered by local governments.

The Waste Management Strategy aims to improve resource recovery and disposal pathways for specific materials within Monash.	Goal 1 Goal 4
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5.4 Working with CALD Communities

Monash is a culturally and linguistically diverse (CALD) community which presents a range of challenges in communication, engagement and priorities for waste management services. 50%⁷ of the Monash population speaks a language other than English at home which indicates the importance of working with and considering CALD communities. After English, the other main languages spoken at home are Mandarin, Greek, Cantonese and Italian.

⁶ Clean Up Australia Ltd, Battery Recycling Fact Sheet, 2010

⁷ .id, The Population Experts (<http://profile.id.com.au/monash/language>) Accessed: December 2017

Community engagement is a process of involving citizens in decision-making processes through listening, relationships and collaboration and special attention is required when working with CALD communities. Barriers to working with CALD communities involve the lack of communication resources available and relevant to these groups. Considerations such as providing interpreters for verbal translations and printed material so that fair access to the information is enabled.

The Waste Management Strategy aims to enable participation from the Culturally And Linguistically Diverse community in its engagement program and education programs.	Goal 4 Goal 5
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5.5 Multi-Unit Developments (MUDs)

The growth of Melbourne’s population has led to the expansion of MUDs and this is similar for Monash. Monash has 523 MUD sites, 71% of these are residential, 19% commercial and 10% industrial which presents significant challenges to the waste services provided to these buildings and residents. Many of the challenges are derived from poor planning systems, such as poor access for collection vehicles and a lack of storage space provided for waste and recycling bins and hard rubbish. Generally, there is also a lack of kerbside space for bin presentation which impacts on amenity and limited opportunities for the residents to recycle. Older public housing developments have an absence of recycling infrastructure and reduced waste capabilities compared to newer developments too.

These issues lead to significant differences in the types of waste collected, recycled and diverted from MUDs. Typically, according to the MIP⁸, a metropolitan household has 10% recyclable material which is not recovered, whereas the figure for a MUD is 42%. The MIP also states that bin contamination rates are generally higher in MUDs, at an average of 25%, when compared to general households which are about 13.5%

The Metropolitan Implementation Plan calls for better developed MUD policy to ensure adequate waste bin storage, collection and street space. Insufficient or poor recycling facilities is a definite barrier to recycling behaviour in MUDs and leads to higher rates of dumped rubbish around these developments, despite the Best Practice Guide⁹ stating that the disposal of garbage and recyclables should be equally convenient. The Monash ‘Recycling Education Program’ was conducted around Monash University and Clayton shopping centre. It focused on MUDs and student accommodation facilities. Through educational activities and tools such as bin stickers and signage installed at MUDs and bus stops, dumped rubbish and bin contamination was reduced. This program shows that waste management in MUDs poses a particular challenge to the Council, but there are program outcomes which can be implemented to improve the issues.

⁸ Metropolitan Waste and Resource Recovery Group, Metropolitan Waste and Resource Recovery Implementation Plan, 2016

⁹ Sustainability Victoria, Guide to Best Practice for Waste Management in Multi-Unit Developments, 2010

The Waste Management Strategy aims to improve planning for Multi Unit Developments and increase resource recovery from these sites.	Goal 1 Goal 4
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5.6 Recent Introduction of Rate Capping

In 2015 the Victorian Government introduced a rate capping system called ‘Fair Go Rates’ which controls the general rate increases for councils during each financial year. This rate capping impacts on the ability of local governments such as Monash to deliver services such as waste collection and disposal and has resulted in the consideration of a Waste Charge. From a recent review of the waste service expenditure, Council found that increases in the cost of providing the service is likely to exceed the annual rate cap which highlights the need for consideration of the Waste Charge. Although the Rate Cap states that it does not apply to service rates and charges, Monash is one of the few Councils which includes services under general rates.

The rate cap introduced by the Essential Services Commission applies only to general rates and municipal charges which account for about 88%¹⁰ of the total revenue raised by councils. The annual rate of change in the CPI is the main driver for how the cap is calculated, alongside the Wage Price Index (WPI). The ESC acknowledges that the Rate Cap can’t account for the diversity and different needs of the 79 various Victorian councils and so a variation process has been established for Councils to account for other cost pressures through an application process.

Council is working with an estimated rate cap of 2% for its long term financial plan.

The Waste Management Strategy aims to ensure that waste services can be sustainably provided to the community and ensure value for money where appropriate.	Goal 4 Goal 5
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5.7 Hard Waste Collection

Hard waste collections provide households with the opportunity to dispose of materials which are not usually accepted in the weekly or fortnightly collections. The annual collection of hard rubbish and green organics has been provided to the ratepayers of Monash for the last 20 years and is an expected service which occurs over approximately 5 weeks between August and September.

Scavenging is an issue central to the hard waste collection service. It is the practice of people going through the presented material and taking items of appeal. This can be either incidental, for example residents walking past and seeing something which they like, or planned by organised

¹⁰ Essential Services Commission, A Blueprint For Change Local Government Rate Capping and Variation Framework Review Final Report, 2015

scavengers which target items of financial value. The pilfering of high value materials inflates the cost of collection for Council by decreasing the value of the recovered items. Scavenging can cause amenity problems by scattering material outside of the prescribed presentation area.

In the 2015-2016 hard waste collection, the contractor WM Waste Management Services, issued 3,276 Unacceptable waste or 'knockback' notices for issues such as unwrapped glass, paint, tyres, recyclables and asbestos. In the 2014-2015 collection, only 275 notices were issued. This indicates the need for community education on correct presentation and accepted materials for the service.

The Waste Management Strategy aims to improve community education on the hard waste service.	Goal 4 Goal 5
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5.8 Landfill Closures in South-East Melbourne

Landfills in the Clayton South precinct have reached capacity and are closing which presents a significant challenge for metropolitan waste management. These landfills receive/received wastes including MSW, industrial and solid inert. It is predicted that the south-east catchment has approximately 8 years¹¹ of landfill capacity remaining and there are no new proposed landfills scheduled which adds further pressure to this issue. On a wider scale, it is estimated that the total of Victoria's landfills has capacity for 10 more years of landfill waste.

Although there are aims to reduce waste sent to landfill, it is unlikely that the area will be able to cope with future waste growth, driven by increased population. Residual waste will then need to be transported to alternative landfills which are likely to be some distance away which increases transportation cost and time. Alternative recovery options, driven by the Victorian market are likely to be an alternative

The Waste Management Strategy aims to minimise reliance on landfills and reduce the need for large transportation distances for waste disposal.	Goal 1 Goal 2 Goal 4
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5.9 Disposal Challenges

The Environmental Protection Authority (EPA) regulates and oversees the performance of landfills. All landfills are required to comply with the *Environmental Protection Act 1970* to reduce the impacts made to the environment. Regulations and compliance documents make it difficult for residents to understand how to properly dispose of their waste and can restrict the recovery of waste materials.

¹¹ Sustainability Victoria, Statewide Waste and Resource Recovery Infrastructure Plan Victoria 2015-2044, 2015

The EPA requires the operators of landfills to pay a levy for each tonne of waste that is deposited at the licensed site. This is called the landfill levy and was introduced in Victoria in 1992. It is aimed to create an incentive to investigate different ways to reduce the amount of waste generated and disposed at landfills. For each tonne of metro municipal waste deposited at landfill for 2014/15, there was a fee of \$58.50¹², which has been increasing annually, see **Table 5-1**. This value is set by the Treasurer of Victoria for every financial year.

There are further challenges to waste disposal with respect to e-waste. This comprises of electronic equipment that has a plug or battery, and includes items like televisions, computers, mobile phones and white goods. In 2014, approximately 80,870¹³ tonnes of e-waste were generated in Melbourne, and is a waste stream growing at a rate three times faster than municipal waste in Australia¹⁴. According to Clean Up Australia¹⁵, e-waste is responsible for 70% of the toxic chemicals in landfills. This highlights the importance of effective and sustainable e-waste recycling and disposal. The Victorian government is preparing to ban e-waste from landfills which will potentially impact on TS processes. A notice of intention has been posted for the e-waste ban and legislative changes are expected in July 2018. A new waste management policy and complementing guidelines will also be prepared to ensure appropriate management of the materials.

Table 5-1 Landfill Levies¹⁶

Year	Metro and Provincial	
	Municipal	Industrial
2011/12	44.00	44.00
2012/13	48.40	48.40
2013/14	53.20	53.20
2014/15	58.50	58.50

The Waste Management Strategy aims to reduce waste sent to landfill to avoid the high costs of the EPA Levy.

Goal 1

¹² EPA Victoria, (<http://www.epa.vic.gov.au/your-environment/waste/landfills/landfill-and-prescribed-waste-levies>) Landfill and Prescribed Waste Levies, Accessed: 6th December 2016

¹³ Metropolitan Waste and Resource Recovery Group, Metropolitan Waste and Resource Recovery Implementation Plan, 2016

¹⁴ Department of Environment, Land, Water and Planning, Managing e-waste in Victoria, 2015

¹⁵ Clean Up Australia Ltd, E-Waste Fact Sheet, 2015

¹⁶ EPA Victoria (<http://www.epa.vic.gov.au/your-environment/waste/landfills/landfill-and-prescribed-waste-levies>) Accessed: 19th December 2016

<p>The Waste Management Plan aims to reduce waste sent to landfill by improving E-Waste recovery</p> <p>Council supports advocacy for better use of the Landfill Levy and the Sustainability Fund.</p>	<p>Goal 3</p> <p>Goal 4</p>
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5.10 Food Organics Disposal

Food organics is becoming an increasingly important waste material which requires management. Food organics is waste from households or industry like food scraps and out of date products which are thrown away. The Metropolitan region is divided into three areas for organics disposal which currently does not include food waste and Monash is within the South Eastern Tender Catchment. The Food Organics, Green Organics (FOGO) initiative is proposed for Monash in 2019 and is the combination of food scraps in with the garden organics collection.

There are challenges, such as community concerns associated with odour and separation processes which slow the process of introducing FOGO as they indicate the need for extensive community education. FOGO will likely involve a change in kerbside bin collections from weekly residual waste and fortnightly green services to weekly FOGO bin and fortnightly residual waste collections.

Contamination rates for the FOGO initiative will need to be managed to keep processing costs at a minimum, ensure that the composted products can be used and meet regulatory requirements. Likely contaminants are non-biodegradable plastic bags used to store and transport the food organics between kitchen and bin.

Overarching waste management documents all identify recovering food organics as a means of reducing waste sent to landfill and Monash council documents like the Environmental Sustainability Strategy aim to solve organic waste problems.

<p>The Waste Management Strategy aims to facilitate the introduction of an organics recovery scheme and community education.</p>	<p>Goal 1</p> <p>Goal 3</p> <p>Goal 4</p>
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5.11 Equalisation of Bin Services

There is currently a discrepancy between the bin collection services provided to Oakleigh and Waverley commercial businesses. Waverley currently receives two services per week, whilst Oakleigh receives one. To rectify this, Council can either limit the Waverley bin collection to weekly, or increase the Oakleigh service to twice a week.

Furthermore, approximately 1,666 residential ratepayers do not receive the Council bin collections but contribute, through their annual rates, to these services. The reason for this is accessibility for garbage trucks. Waste collection services are provided by body corporate in these instances.

Council can also take the opportunity to change both the commercial bin lid and residential green waste to the Australian standard¹⁷ (Table 5-2)

Table 5-2 Standard Australian Bin Lid Colours

Material	Body	Lid
Rubbish (residual)	Dark Green or Black	Red
Paper/Cardboard	Dark Green or Black	Blue
Green Waste/Organics	Dark Green or Black	Lime Green
Recyclables (mixed)	Dark Green or Black	Yellow
Food Waste	Dark Green or Black	Burgundy

5.12 Litter

For the year of 2014/15, Monash Council spent \$2.347 million on the collection and disposal of litter from major sources and litter hotspots such as:

- Cigarette butts,
- Charity bins,
- Public reserves and sporting facilities,
- Building sites,
- Shopping precincts
- Bill posters; and
- Trader laneways.

The Council provides street garbage bins, street sweeping and the removal of dumped rubbish as key services to reduce litter. The occurrence of litter is linked to antisocial behaviours such as graffiti and vandalism which affects the wellbeing of the community. Council also works with State Government and other entities to reduce litter.

5.13 Bin Contamination

Bin contamination occurs when items which do not belong in a bin are placed there. Common contaminants of recycling bins are plastic bags and wrappings and garden waste. Monash Council carry out a Bin Inspection Program each week through an 'open lid' inspection. This is carried out by inspectors and through the kerbside collection contractor. Those bins found to be contaminated are stickered with advisory information on what the contamination is. Currently, the Council are stickering 27 garbage bins, 27 green waste bins and 9 recycling bins per month.

¹⁷ Sustainability Australia, Away from Home, Waste Signage Guidelines, 2007

The Waste Management Strategy aims to reduce contamination rates in bins to improve resource recovery.

Goal 1



Opportunities for Improvement

6.1 Organics Processing

MWRRG is developing an organics processing network for metropolitan Melbourne and Monash is situated in the South Eastern Tender Catchment. When completed it will provide opportunities for food and green organics processing facilities. Currently, 40%¹⁸ of residential waste (by weight) to landfill is food organics, so organics processing has the potential to significantly reduce waste to landfill. This strategy would likely see a change in bin services to a weekly food and green waste collection, and fortnightly recyclable and general waste collection. Limitations to the success of this strategy mainly lie with the community as there is the potential for reduced customer satisfaction from amenity complaints and changes to services. Furthermore, there is likely contamination of these bins from plastic bags by residents. Organics processing facilities are not yet available however, and so this option cannot be immediately implemented.

Within Council education programs, there is a capacity to improve community knowledge on organics composting as a strategy to reduce landfill waste. Currently, Monash has the 'Compost Revolution' program to encourage composting. Increasing the capacity and ability of residents and commercial businesses such as restaurants and cafes to compost and reduce food waste is a method of improvement. This can be achieved through community engagement with the issue and through developing and implementing new education programs.

There is a disparity between the number of residual waste bins (68,281) and organics bins for households (61,971). This difference of 6,310 bins indicates a greater capacity for organics recycling through the introduction of new bins to residences.

The Waste Management Strategy aims to encourage community support for organics recovery and processing.	Goal 1
	Goal 3
	Goal 4
	Goal 5

¹⁸ Sustainability Victoria, Food Waste in the Garbage Bin, 2013

6.2 Municipal Waste

Monash Council currently provides a 120L waste bin for residences. There are options for bin size changes shown in **Table 6-1**. All charges are added to annual rate bill.

There is evidence that a reduction in bin size to an 80L capacity will reduce waste generated by households and encourage recycling. There are several options for introduction of this plan such as giving households the option to reduce their bin size for a reduced Waste Charge (if a Waste Charge is introduced) or for reduced annual rate fee. The Council may also choose to change bins for the whole municipality so that immediate effects can be observed. Or lastly, bins can be reduced when they are reported damaged or missing by residents, thus saving costs on delivery. This strategy has been implemented by Whitehorse Council as part of their 2011 WMP, by charging residents an extra \$44 a year if they decided to keep the 120L bin, rather than accept the new 80L. The issues to be considered with this plan are:

- Increased contamination of recycling bin if 80L waste bin is not enough
- Larger waste requirements of families and other large waste generating households
- Increased compaction of waste inside bins

The Waste Management Strategy aims to explore options of bin size reduction to reduce waste sent to landfill in conjunction with the introduction of FOGO collections.	Goal 1 Goal 2
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6.3 Comingled Recycling

Monash Council has the option of allowing residents to increase their recycling ability through increasing their bin size or recycling capacity. Residents can request an additional 240L recycle waste bin, or upgrade the existing 120L bin at an annual cost of \$191.50 (**Table 6-1**). Reducing the cost of a larger bin upgrade could be an incentive to increase recycling rates for residential waste generators. This cost could be reduced or a once-off payment rather than a yearly addition to the rates.

Table 6-1 Optional Changes to Residential Bins

Current Bin	Changes to bin size	Annual Cost
120L Garbage bin	Upgrade to 240L garbage bin	\$199.15
240L Garbage bin	Additional 120L garbage bin	\$199.15
240L Garbage bin	Additional 240L garbage bin	\$383.00
240L Recycling bin	Additional 240L recycling bin	\$199.15
240L Organics bin	Additional 240L Organics bin	\$199.15

Commercial recycling rates have the potential for major improvement as average tonnages collected since July 2014 are approximately 7tonnes per month. There are currently only 484 commercial recycling bins in operations too. Increases in commercial recycling bins in operation has the potential to have an impact on reducing waste to landfill and increasing recovery rates. Only those commercial properties which are within or adjacent to residential properties are able to receive the recycling collection (at an additional cost). Removing this location restriction may improve commercial recycling uptake.

<p>A 2011 Public Place Recycling (PPR) project conducted by Monash City Council showed an increase in recycling rates at Monash Shopping Village in Mt Waverley. Through the research which was conducted, introduction of new bin designs and education, there was a 50% drop in recyclables in litter bins and a reduction in landfill garbage and low bin contamination rates. This project shows that there is potential for increased public place recycling and reduction in landfill waste through the introduction of these designed bins. The Waste Management Strategy aims to explore ways to incentivise waste minimisation and resource recovery</p>	<p>Goal 1</p> <p>Goal 2</p> <p>Goal 4</p> <p>Goal 5</p>
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6.4 Hard Waste Collection

Monash Council will consider an ‘At-Call’ collection service. Surrounding and metropolitan councils offer different hard waste services, as shown in **Table 6-2**. The most common collection is a booked service, neighbouring Boorondara and Knox allow residents to book 2 hard waste collections for each financial year. This type of service can reduce the amount of scavenged material from the site and thereby increase the revenue made from providing the service. The At-Call system has a greater potential to accommodate the needs of residents or tenants that depart properties during various times of the year, or those residences with a higher turnover in occupancies such as student housing. This can reduce the amount of dumped rubbish and is particularly applicable to areas with student residences such as Monash University.

Monash currently provides a blanket collection which is a service offered to the municipality over a few weeks of the year. The benefits of this system are that hard waste is only allowed on nature strips for a limited time per year, resulting in less of a visual impact than the at-call system. There are also cost efficiencies in completing the collections over a limited period of time, and higher participation rates.

Evaluations on the cost-effectiveness should be made and considerations as to whether a new service should be additional to the annual collections, or replace them, and the number of collections allowed per household. The Metropolitan Implementation Plan has analysed future needs and suggests that ‘there is a need to make hard waste collections more cost effective and to increase the amount of materials that can be recovered from collections’.

Table 6-2 Hard Waste Services in Metropolitan Melbourne¹⁹

Blanket Collection	Booked Collection	Combination
<ul style="list-style-type: none"> • Monash • Cardinia • Yarra Ranges • Whittlesea • Stonnington • Moreland • Moonee Valley 	<ul style="list-style-type: none"> • Mornington Peninsula • Casey • Greater Dandenong • Knox • Maroondah • Whitehorse • Manningham • Boroondara • Yarra • Bayside 	<ul style="list-style-type: none"> • Frankston • Kingston • Brimbank • Darebin • Glen Eira • Port Phillip • Hobsons Bay • Wyndham • Melton • Hume • Maribyrnong • Melbourne • Banyule • Nillumbik

The Waste Management Strategy aims to explore options for a different hard waste service provided to the community including an additional user pays at call service.

Goal 4
Goal 5

6.5 Dumped Rubbish

In Metropolitan Melbourne, illegally dumped rubbish costs local governments approximately \$7.5million a year. There are ‘hot-spots’ for dumped rubbish such as outside of MUDs and along roadways, and the presence of illegal waste can often lead to additional dumping. On average, the Waste Transfer Station records 274.75 tonnes of dumped rubbish a year, costing the City of Monash around \$350,000. 2015/16 recorded the highest amount of dumped rubbish in recent years with approximately 310 tonnes. Currently Monash Council responds to reports of dumped rubbish by collecting within 24hours. This quick turn-around has little impact in reducing the incidences of dumped rubbish in the municipality.

An option for improvement is to increase the visibility of rubbish dumping and inappropriate hard waste presentation by using high-vis tape. By first identifying the site as a problem with the tape, residents and locals will be discouraged from illegal dumping. A trial conducted in 2012 resulted in 60% of the rubbish being removed by the responsibly party. This encourages residents to take responsibility for their waste. However, taping does have the potential to impact on the Council’s community satisfaction through reduced amenity and complaints.

Another option to reduce dumped rubbish, and litter, is to introduce a Litter Prevention Officer (LPO) to pursue offenders and encourage community education on the issue. Currently, the

¹⁹ Metropolitan Waste and Resource Recovery Group, Hard Waste Services Leading Practice Guide, 2016

Community Amenity Department investigate dumped rubbish if evidence is found on site. However, an LPO can respond more quickly to reports of littering and rubbish dumping and can provide beneficial community education. Programs such as ‘Don’t Trash Monash’ which are already being implemented should continue as well.

The EPA encourages people to report illegal dumping through hotlines or apps.

The Waste Management Strategy aims to address the issue of dumped rubbish within Monash.	Goal 4 Goal 5
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6.6 Waste Charge

Currently, the cost for Monash’s waste service is included in the general rates which residents pay on an annual basis. With the recent introduction of Rate Capping by the ESC, the general rate increases are controlled and limited each financial year by the ESC. Cost projections of waste service expenditure for Monash’s waste service show that the cost of providing it will likely exceed this cap. Reasons for this increase in expenditure include increasing:

- Disposal tonnages;
- EPA waste levy;
- Fuel prices;
- CPI prices; and
- Disposal and collection costs with new waste contracts such as the new green waste contract in 2019.

Council views the Waste Charge as a challenge due to the importance it places on customer satisfaction and service. The most recent Community Satisfaction Survey in 2016 showed that in regard to rates, the community was most concerned about increasing rates without noticeable service improvement. Without the separate Waste Charge, however, Council’s ability to provide other services will be unreasonably impacted.

Different models for possibly introducing the charge may be considered, such as having an Environmental Charge for all properties instead which covers services like street sweeping and cleaning of public places. This may address the inequity experienced by 1,666 residences which do not receive waste services from Council. This is generally in MUDs where private waste services are often used. Before the introduction of this charge however, Council should conduct a further review into Waste Charge options and the waste budget.

While there is no financial imperative currently the Waste Management Strategy may explore the possibility of a Waste Charge at a future date should costs increase above a sustainable level.	Goal 4
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Feedback from the community

There has been extensive community consultation conducted throughout the development of the Strategy. Initial consultation was sought from the community to identify key issues and drivers for change from the perspective of the residents, followed by exhibition of the Draft and information sessions. There was also a survey mailed out to residents regarding new options for the hard waste service and waste charges.

Strategy Development

Feedback was gathered from the community to help direct the strategy and gain input from residents and Monash visitors through the methods of an online survey, community workshops and phone and email comments. The four broad topics discussed were: public services, food organics recycling (FOGO), possible introduction of a waste charge and options for hard rubbish

There was a consensus to increase opportunities for small item recycling, such as batteries, light globes and plastic bags (soft plastics) and dumped rubbish was identified as an ongoing nuisance. Increased surveillance was suggested as a solution. It was also clear that an education program on the functioning and pricing of the Waste Transfer Station would be beneficial.

Most people were in favour of introducing food organics recycling into their waste system. Main concerns were that the initiative would be a disincentive to compost at home and that the process may attract rats.

Results from the survey show that 53% of respondents require more information on a waste charge before deciding whether to support it or not. There was support for a user pays system if it were introduced and comments to reduce council spending to avoid the charge and requests for further information on what other services would be impacted if the charge was not introduced.

Hard Rubbish: Generally, most people are satisfied with the current annual blanket collection but would support a change to a combination service which retained the annual blanket and offered a booked collection. Workshop discussions highlighted a concern that community amenity may be impacted with a booked collection, but recognised a need to cater to the more transient residents within Monash.

Draft Strategy and survey feedback

Following the release of the Draft Strategy online for exhibition, Council subsequently undertook independent consultation through additional information sessions and release of a survey concerning hard waste options.

Most feedback did not support increases to annual rates, or to separate these costs from the rate-capping system. The Strategy does not recommend the introduction of a separate waste and environment charge at this stage.

The Strategy proposes the investigation of an at-call hard waste collection service which could replace the current blanket service, or be offered in conjunction with it. Most responses still showed concern for the amenity issues arising from the possibility of having hard waste on nature-strips year-round

A number of changes to the Strategy have been made in response to the feedback received. The blue boxes which act as a summary for most sections have been altered to indicate which of the five goals they relate to. This was a suggestion by the Environmental Advisory Committee and effectively connects the goals, context and actions. Other minor suggestions which have been adopted involve the re-wording of terms, additional clarification and inclusion of helpful information throughout the report.

The feedback shows that residents of Monash clearly understand the value of education in waste matters and that they would support more of it. Education focused on waste reduction, awareness and recycling processes was called for and has been addressed in the Strategy

A portion of the feedback called for a greater focus on environmental sustainability and caring for the environment. The Strategy highlights that Council follows the published Waste Hierarchy which values waste avoidance, reduction and reuse as the key actions for waste management. The goals of increasing diversion of waste from landfill and minimising waste generation also show Council's environmental focus.

The survey which was also mailed out to residents at the end of October 2017 provided information detailing two different options for a new hard waste collection system for which were described as follows:

- Option 1: Is keeping the existing once-a-year pick-up of hard waste on a date set by Council, with the addition of one at-call hard waste collection each year at a cost of up to \$150 to the householder. If you do not use this additional at-call service, there will be no extra charges and the hard waste service essentially remains as you have it now
- Option 2: is an enhanced service that offers each property up to six booked collections each year of hard waste, bundled green waste (for larger branches or garden waste that does not fit in your green waste bin) and bulk cardboard. This will mean that each year you are able to book two hard waste collections, two bundled green waste collections and two cardboard collections at a time of your choosing.

Most of the written responses were in opposition of Option 2. It was clear that residents did not agree that the option is an 'enhanced' service, or that it provides additional choice in the items which can be picked up, as described in the cover letter. Residents would prefer an option which did not cater to those who generate more waste.

Option 2 also presented changes to the format of the annual rates notice by removing waste charges from the general rates. This would also remove the waste charges from the Fair Go Rates System (FGRS) which caps increases to 2% annually. Lack of clarity regarding how the options were costed was a clear issue and many comments called for Council to show more decisive pricing

rather than averages and estimates. This is why a separate investigation into the introduction of a waste charge is proposed.

Approximately 30,000 survey responses were received, with 77% in favour of Option 1. The feedback favoured the increased flexibility of having an extra collection and the user pays charging system. Many respondents saw this as a fairer way of providing the at-call service, preferring that those who wish to receive an extra collection must pay for it themselves.

In all formats of response there was a significant degree of confusion which was caused by the wording and layout of the survey and as a result there was apprehension about Council's decision-making process. It is clear that residents want the results of the survey to be published and adhered to by Council for this matter.

Action Plan

The following key performance indicators in **Table 9-1**, will allow a snapshot assessment of Monash’s performance against other Councils and in relation to the actions in this strategy.

The action plan detailed below (**Table 9-2**) has been developed through the processes of community consultation and service review and are designed to enable achievement of the objectives of this strategy. Priorities are given a value between 1 and 3, with 1 being the highest priority. These values were determined from the outcomes of the community consultation sessions, where a strong priority was given to issues of municipal amenity and costs to rate payers.

Table 9-1 Key performance indicators

KPI	Current (2015/16)	Target by 2022	Target by 2027
Waste diversion rate	50.99%	60%	75%
Residual kgs per tenement per year	454	420	400
Recycling kgs per tenement per year	222	240	260
Organics kgs per tenement per year	251	275	300
Annual kerbside waste generation (residual, recycling and organics) per resident per year (kgs)	352	320	300
Reduce Councils corporate waste to show commitment to working toward waste generation		60% of 2017 baseline	90% of 2017 baseline

Table 9-2 Action Plan

Service	Current Service	Option	Measurement	Priority
Increase waste diversion from landfill				
Product Stewardship	Large amount of packaging noted by Monash residents and council members in the waste stream	Encourage residents to purchase reusable and durable products (promote product stewardship)	Volume of waste sent to landfill Volume of recyclables	1
Domestic Residual Waste	120L bin standard	Start a trial area with 80L residual bins to reduce amount of waste to landfill. If successful, extend the trial area and then implement throughout municipality	Number of 80L bins in operation Volumes of waste sent to landfill	2
Composting and organics	Green waste collected fortnightly from kerbsides	Introduce an organics recovery scheme where food waste is put in the green waste bin (FOGO)	Implementation of FOGO within Monash	1
	Council to support the purchase of worm farms	Council to continue to encourage home organics recycling through composting and worm farms to reduce waste to landfill.	Number of compost bins sold	2
	Compost Revolution programs	Expand program with education officer and targeted houses with high levels of organics in bins (identified through bin audit)	Bin Audit	2
	Difference of 6,310 less organics bins than residential residual bins	Introduce an organics bin to those residences that don't currently have one in preparation for FOGO	Percentage of residences with organics bins	2

Commercial Bins	Bins distributed and collected separately to participating businesses	Identify business areas with available space for a communal/shared recycling bin. Trial area with large bin to encourage commercial recycling	Number of shared commercial bin spaces Percentage of commercial properties served by Council recycling service	2
Commercial and Industrial Properties	No uniform service as a legacy of Council amalgamations Limited Council waste services	Investigate the cost of a bi-weekly service to all commercial properties	Volume of recyclable material from C&I properties Implementation of standard service to all C&I properties	3
		Conduct an audit of bin contents to identify dominant waste type and opportunities for resource recovery	Volume of waste sent to landfill Volume of recyclables collected	3
Minimise waste generation through education;				
MUDs	MUD Recycling Education Program	Continue and extend the program beyond Clayton	Bin contamination rates at MUD sites Occurrence of dumped rubbish at MUD sites	2
Litter	Cigarette butts recorded as most littered material in Monash	Develop an education program directed at preventing cigarette litter	Reports of cigarette litter	
Leading the way;				
Corporate Waste	Environmental Sustainability Strategy aim to 'reduce Council's corporate waste'	Education for Council staff to reduce corporate waste	Volume of corporate waste	1

MWRRG	Monash is part of MWRRG	Consider participation in collective contracts being facilitated by MWRRG	Implementation of actions determined by MWRRG and collaboration with other Councils	2
New Technology	Overarching push by SWRRIP to develop growth in technology within the waste sector	Support innovation for the introduction of new technologies in waste management	Implementation of new technologies Preparedness for use of new technologies	3
		Council to work with industry and State Government to promote investment in alternative waste management options, including Waste to Energy	Preparedness for the closure of landfills	1
Serving our customers				
Bin Audits	Accurate information of bin numbers and use	Conduct an in-depth bin audit for residential and commercial bins to investigate: <ul style="list-style-type: none"> • The need for additional bins • Opportunities for better recycling • MUD bins and opportunities for improvements • Services to schools and organisations • Data verification for Waste Charge design and implementation • Establish data on current volume of contaminants and type of contaminants 	Audit conducted	1
Waste Charge	While there is no financial imperative currently, the Waste Management Strategy may explore the possibility of a Waste Charge at a future date should costs increase above a sustainable level.	Conduct a separate investigation into options for a possible Waste Charge		3

MUDs	Lower recycling rates and inequitable services	Conduct a review of bin sizing	Recycling rates Volume of recyclable material collected	2
	Poor vehicle access and storage facilities	Implement/enforce requirements in development applications to ensure adequate waste facilities and access	Accessibility in new developments Number of Council services to MUDs	2
Aged Residential Units		Implement/enforce requirements in development applications to ensure adequate waste facilities and access	Number of Council services to aged residential units	2
	Poor vehicle access and storage facilities	Implement innovative waste collection systems as a requirement in development plans Consider InSinkErator installation to reduce waste to landfill and enable easier waste management by residents	Results in annual 'Know Your Council' report for waste services	3
Review of WMS	Release of WMS in 2017	Review and update WMS periodically to consider new technologies or opportunities	Review conducted	3
Pride in our city				
Dumped Rubbish	Identified as an issue by residents and Council. Reported dumped rubbish is removed with 24hrs	Promote reporting of rubbish dumping and littering Education on dumped rubbish Enforcement of dumped rubbish fines and notices	Number of dumped litter reports Occurrence of dumped rubbish in municipality Volume of dumped rubbish collected	1

Hard Rubbish Collection	20.9% recycle rate	<p>Enforce shorter presentation time to increase value of hard waste materials, ensure street amenity and improve health and safety measures.</p> <p>Enforcement of presentation time through notices and penalties for non-compliance</p>	<p>Hard rubbish out for a maximum of 24 hours before collection day</p> <p>Increase in percentage of recycled materials from collection</p> <p>Number of notices issued for non-compliance</p>	1
	Illegal/ Professional Scavengers	Request placement of hard rubbish within the boundaries of the residence (within front yard or driveway)	<p>Number of reports of professional scavengers to Council</p> <p>Percentage of recyclable materials gained from collection, particularly metals</p>	3
	Annual brochure on hard rubbish presentation	Improve communication in brochure and provide stricter instructions on acceptable rubbish and presentation	Number of knockback notices issued	1
	Annual blanket collection	Additional at call fee per service collection	Number of dumped rubbish complaints	1
	Operation of Waste Transfer Station	Promote additional education and use of facility		

Litter Management	Monash Pride Crew and Waverley Industries	Employ extra member to Monash Pride Crew and extend service to smaller shopping centres	Size of area managed by Pride Crew Number of complaints to Council for public litter in these areas	1
	Litter Prevention Strategy 2009-2013	Finalise and implement the Litter Prevention Action Plan 2017-20	Community access to new plan Implementation of plan	1
	Street sweeping on a 5-week cycle	Release GPS information on sweeper routes to the community	Number of complaints regarding lack of sweeping	3

References

- .id, The Population Experts. (2016, December 13). *Community Profile*. Retrieved from <http://profile.id.com.au/monash/employment-status>
- .id, The Population Experts. (2016, December 5). *Community Profile*. Retrieved from <http://profile.id.com.au/monash/language?WebID=160>
- .id, The Population Experts. (2016, November 29). *Population Forecast*. Retrieved from .idcommunity: <http://forecast.id.com.au/monash>
- Australian Packaging Covenant . (2016, December 19). *Australian Packaging Covenant*. Retrieved from About APC: <http://www.packagingcovenant.org.au/pages/about-apc.html>
- City of Greater Dandenong. (2011). *Profiles and Victorian Municipalities*.
- City of Monash. (2010). *Monash 2021*.
- City of Monash. (2011). *Engagement Framework*.
- City of Monash. (2011). *Environmental Sustainability Road Map 2011-2015*.
- City of Monash. (2013). *Municipal Emergency Management Plan*.
- City of Monash. (2013). *Municipal Emergency Management Plan*. City of Monash .
- City of Monash. (2016). *Environmental Sustainability Strategy 2016 - 2026*.
- City of Monash. (2016, November 29). *Our Profile & Growth*. Retrieved from <http://forecast.id.com.au/monash>
- City of Monash. (2016, November 24). *Our Values, Vision and Mission*. Retrieved from <http://www.monash.vic.gov.au/About-Us/Council/Our-Organisation/Monash-Values>
- City of Monash. (2017). *A Healthy and Resilient Monash: Integrated Plan* .
- City of Monash. (2017). *Council Plan, 2017-2021*.
- City of Monash. (2017). *Draft Economic Development Strategy and Action Plan 2017-2021*.
- Department of Environment, Land, Water and Planning. (2015). *Effective Engagement*.
- Department of Environment, Land, Water and Planning. (2016, November 23). *Know Your Council*. Retrieved from <https://knowyourcouncil.vic.gov.au/councils/monash>
- Environmental Protection Authority Victoria . (2016, December 19). *Landfill and Prescribed Waste Levies*. Retrieved from EPA Victoria: <http://www.epa.vic.gov.au/your-environment/waste/landfills/landfill-and-prescribed-waste-levies>
- Essential Services Commission. (2015). *A Blueprint for Change, Local Government Rate Capping and Variation Framework Review Final Report*. Essential Services Commission .
- Infrastructure Victoria. (2016). *Victoria's Draft 30-Year Infrastructure Strategy* .

Local Government Victoria . (2016). *Local Government Better Practice Guide Strategic Resource Plan*. Department of Environment, Land, Water and Planning.

Metropolitan Local Government Waste and Resource Recovery Fund . (2016). *Improving Resource Recovery with Residents at Multi-Unit Dwellings* .

Metropolitan Waste and Resource Recovery Group . (2016). *Metropolitan Waste and Resource Recovery Implementation Plan*. Metropolitan Waste and Resource Recovery Group.

Metropolitan Waste and Resource Recovery Group. (2016). *Hard Waste Services Leading Practice Guide*.

State Government Victoria . (2013). *Getting Full Value, The Victorian Waste and Resource Recovery Policy*. Melbourne: Victorian Government.

State Government Victoria . (2014). *Plan Melbourne Metropolitan Planning Strategy* . Melbourne : Victorian Government.

Sustainability Victoria . (2015). *Investment Facilitation Framework / Participate Sustainability* . Melbourne: Sustainability Victoria.

Sustainability Victoria. (2010). *Guide to Best Practice for Waste Management in Multi-unit Developments*.

Sustainability Victoria. (2010). *Guide to Best Practice for Waste Management in Multi-unit Developments* .

Sustainability Victoria. (2011). *Kerbside Recycling in Metropolitan Melbourne - Social Research Summary* .

Sustainability Victoria. (2013). *Food Waste in the Garbage Bin*. Melbourne : Sustainability Victoria.

Sustainability Victoria. (2013). *Victorian Litter Strategy 2012-2014*.

Sustainability Victoria. (2015). *Collaborative Procurement Guidelines for Regional Waste and Resource Recovery Groups*. 2015 : Sustainability Victoria.

Sustainability Victoria. (2015). *Statewide Waste and Resource Recovery Infrastructure Plan Victoria 2015-44*. Melbourne: Sustainability Victoria.

Sustainability Victoria. (2015). *Victorian Organics Resource Recovery Strategy*. Melbourne: Sustainability Victoria.

Sustainability Victoria. (2015). *Victoria's Waste and Resource Recovery Infrastructure Investment Prospectus*.

Sustainability Victoria. (2016). *Victorian Market Development Strategy for Recovered Resources* . Melbourne: Sustainability Victoria.

Sustainability Victoria. (2016). *Victorian Waste Education Strategy* . Melbourne: Sustainability Victoria.

Victoria State Government. (2017). *Climate Change Act 2017*.

Victorian Government. (2013). *Getting Full Value, The Victorian Waste and Resource Recovery Policy* . Melbourne: Victorian Government .

WM Waste Management Services. (2016). *Annual Collection of Green Organics (Prunings) and Hard Rubbish for Monash City Council* . Boronia .

WorkSafe Victoria. (2008). *A Handbook for Workplaces, Safe Collection of Hard Waste*.

Appendix A Council Plan



Table A-1 Council Objectives

Key Directions	Community Outcomes	Strategies to Achieve Outcomes	Waste Related Actions
<p>Ensuring our city has inviting places and spaces</p>	<p>Enhanced parks, open spaces and trails across Monash</p>	<ul style="list-style-type: none"> • Review the accessibility and quality of public open spaces across Monash for development of a new Public Open Space Strategy for Monash - <i>'Creating Better Spaces'</i> • Improve walking and cycling trails, including connections between existing public open spaces and links to activity centres across the City • Further develop amenities and facilities within parks and reserves that reflect preferences expressed by communities 	<ul style="list-style-type: none"> • Reduced litter in open spaces; and • Improved waste management to lower climate change impacts
	<p>Access and safety needs are attended</p>	<ul style="list-style-type: none"> • Upgrade footpaths and pedestrian continuity • Explore Monash becoming an 'age-friendly City' 	<ul style="list-style-type: none"> • Equitable access to waste services; • Improved infrastructure to support growing population; • Reduce manual handling of bins; and • Ensure bin locations are accessible and safe.
	<p>Impacts of the density of residential developments are monitored and manage</p>	<ul style="list-style-type: none"> • Gather data and identify better means for understanding the cumulative impacts on streetscapes and local communities • Adopt an evidence-based approach to the management and ongoing renewal of our City's public tree canopy • Utilise our annual planting program to improve the amenity and liveability of local areas associated with increasing residential density 	<ul style="list-style-type: none"> • Better management of MUDs waste servicing; • Better access to MUDs collection bins; • Better communication between service providers and residents of MUDs; and • Revised and implemented policies which govern waste planning in new developments

		<ul style="list-style-type: none"> • Pursue new strategic plans and policies to provide stronger direction about residential developments of increased density • Build community understanding of development and housing issues 	
	<p>Activity Centres across Monash remain vibrant</p>	<ul style="list-style-type: none"> • Undertake studies on major activity centres (MACs) across the City, identifying priorities for planned changes. Studies to also include: <ul style="list-style-type: none"> – A focus on railway station ‘precincts’ and transport interchange points, giving them a stronger focus and legibility (through urban design treatments, transport planning, pedestrian continuity and signage); – Analysis of local opportunities, costs and benefits of locating Community Centres/Hubs within each MAC; and – Consult the <i>Public Art Policy</i> regarding the possible inclusion of public art in our cultural and activity centres. • Develop design guidelines for future developments in and around activity centres through the preparation of Urban Design Frameworks, Structure Plans and other appropriate planning tools; • Improve the maintenance and viability of activity centres across Monash; and 	<ul style="list-style-type: none"> • Increased waste collection at Activity Centres by ensuring recycling bins are present

		<ul style="list-style-type: none"> • Continue to develop our Library Service and the Monash Gallery of Art. 	
Achieving a healthy and active Monash	Increased use of our parks, spaces and leisure facilities	<ul style="list-style-type: none"> • Build on the Active Monash initiative and campaigns; and • Work with local sporting clubs and community groups to maximise the use of parks, open spaces and Council’s leisure facilities. 	<ul style="list-style-type: none"> • Reduced litter in open spaces; • Street sweeping services; and • Community behaviour change programs
	Residents inspired to remain physically active and healthy	<ul style="list-style-type: none"> • Identify key health issues for the Monash population and the priorities for attention over the next four years for promoting an ‘Active and Healthy Monash’ • Implement the relevant actions from each of the following Council strategies: <ul style="list-style-type: none"> – The Positive Ageing Action Plan and the Monash Baby Boomer Strategic Action Plan – The Monash Early Years Plan and Monash Youth Plan 2013/17; – The updated Monash Women’s Leadership and Participation Strategy; – Physical Activity Plan (developed by Council’s Youth and Recreation Services team); and – Action Plans within the Monash Access and Equity Framework 2013/17. • Encourage independence of residents aged 65+ through the Department of Human Services Active Service 	<ul style="list-style-type: none"> • Reduced litter in open spaces;

		<p>Model;</p> <ul style="list-style-type: none"> • Review and update the strategies for promoting active ageing in Monash; and • Support a ban on smoking in alfresco dining areas across Monash. 	
	Strengthened community resilience to the harm from gambling	<ul style="list-style-type: none"> • Consider the recommendations of the <i>2012/13 Gambling Research Project</i>; and • Strengthen the focus and work of the <i>Monash Responsible Gambling Taskforce</i>. 	
Fostering confident, connected communities	Communities across Monash celebrate their creativity and diversity	<ul style="list-style-type: none"> • Promote Monash as a diverse and harmonious City; • Encourage participation in arts and cultural activities, including support to community organisations or individuals involved in arts and cultural activities; and • Promote the presentation of art and culture within Monash 	
	Community concerns about personal safety are positively addressed	<ul style="list-style-type: none"> • Gather comprehensive data on the levels of safety (perceived and actual) and promote facts about the level of personal safety in Monash relative to other areas in Melbourne; • Advocate to State Government our community's concerns about safety of railway station precincts, particularly at night, and the expressed need to take action to improve lighting in all parking areas adjacent to and servicing railway stations in Monash; and • Work with traders and/or business 	<ul style="list-style-type: none"> • Community engagement with council planning; • Management of hazardous wastes in public places (e.g. syringe disposal); and

		owners to improve their understanding of community safety issues and undertake trials for improvement.	
	Communities and organisations promote respect and equality and prevent violence against women	<ul style="list-style-type: none"> • Implement the <i>Generating Equality and Respect Project</i> which aims to build equal and respectful relationships between men and women and preventing violence against women. 	
	A stronger sense of community is fostered within local areas	<ul style="list-style-type: none"> • Encourage community gatherings, events and resident meetings to be held at the local level (and providing opportunities for residents to get to know each other) by maximising the use of Council's local facilities and public open spaces for these community gatherings; • Conduct meetings of Councillors and the community at the local level; • Develop a local area <i>Community Engagement Model</i> aimed at harnessing strengths and stakeholders (local services, businesses, community and sporting clubs as well as individual members) of that local community; and • Redesign Council's grants program to strengthen civic participation and community connections (including communities of interest and geographic communities). 	<ul style="list-style-type: none"> • Community engagement within council plans; and • Community education reinforcing values in parallel with waste diversion messages.
Taking action for our future	Our natural and built environment is protected	<ul style="list-style-type: none"> • Focus on our '<i>Environmental Sustainability Roadmap</i>' and 	<ul style="list-style-type: none"> • Sustainable waste management is implemented;

		<p>strengthening our ecological sustainability;</p> <ul style="list-style-type: none"> • Continue work on Water Sensitive Urban Design as a step towards becoming a ‘water sensitive’ City; • Work towards transitioning our street lighting to more energy-efficient technology; • Develop long-term options for waste management, including options of reducing waste to landfill; and • Protect and enhance the viability of Council infrastructure and spaces. 	<ul style="list-style-type: none"> • Increased waste recovery and recycling; • Improved waste management to lower climate change impacts; and • Less waste sent to landfill
	<p>Our local economy is more resilient</p>	<ul style="list-style-type: none"> • Actively promote commercial and industrial land/opportunities for Monash, as an investment in securing more employment opportunities and diversity for our local and regional economies; • Provide information and services to businesses to encourage further growth and development in the sector; • Implement a <i>Buy Local</i> campaign; • Support the work of the <i>Monash Enterprise Centre</i> - a self-sustaining business incubator, assisting individuals seeking to re/locate their businesses to an “office environment”; and • Promote investment in the Monash Technology Precinct as Victoria’s primary strategic location for high technology research and development industries. 	<ul style="list-style-type: none"> • Generation of more jobs through new/improved waste and recycling industry; and • Increased recycling to make use of valuable waste which would otherwise go to landfill



	<p>Innovation and adaptability is cultivated</p>	<ul style="list-style-type: none"> • With the Monash Leadership group, develop a program to improve the organisational culture including specific strategies to support and drive innovation; • Commit to long-term planning and monitoring change over time; and • Monitor and respond to the rollout of the National Broadband Network (NBN). 	<ul style="list-style-type: none"> • Innovation in RRC/TS to promote higher recycling rates and less waste to landfill; • Support the introduction of new technologies, • Removal of regulatory barriers to new technologies; and • Innovation in the conversion of organics to energy
	<p>Investment in our children and young people is continued</p>	<ul style="list-style-type: none"> • Implement the strategic approach to service delivery and planning contained in the Council's <i>Access and Equity Framework-Monash Early Years Plan, 2013/17</i>; and • Work to ensure young people in Monash are valued, respected, healthy and engaged. 	<ul style="list-style-type: none"> • Creating a more sustainable waste industry by reducing waste to landfill and increasing recycled materials; and • Creation of jobs through an improved and increased waste and recycling industry.