



**KNOX CITY COUNCIL**

**WASTE MANAGEMENT PLAN**  
**2014 – 2021**

**Version: 1.0**

**Date of issue: October 2013**

**Knox City Council**  
**511 Burwood Highway**  
**Wantirna South**  
Victoria

# EXECUTIVE SUMMARY

Knox City Council has developed this Waste Management Plan (WMP) to guide Council on the waste related services that will be provided to the Knox Community over the period of 2014-2021. This coincides with the period of the next bin-based kerbside waste collection contract to be tendered in late 2013 and the commencement of any new non bin-based waste collection service contracts.

This WMP has been developed following extensive consultation with stakeholders both within Council and also external to Council. This also included consultation with 2,500 households in Knox.

The WMP has proposed various actions over the seven year period - the main objective being the reduction of waste being disposed to landfill and the increased recovery and re use of waste items, with appropriate and realistic targets proposed for this.

These actions are in some cases a continuation of objectives from Council's current waste management plan which related to the period 2006-2013.

This WMP proposes the following during the seven year period:

- Kerbside residential wheelie bin based collection service incorporating weekly domestic services and a fortnightly recyclables and user pay green waste service.
- The contracts for the kerbside collection of bin based domestic waste, recyclables and green waste to provide the capacity and flexibility to incorporate changes in waste treatment, including the processing of food waste through Advanced Waste Treatment (AWT).
- The residual waste bin will continue to be available in an 80 litre and 120 litre size with a surcharge applied to the 120 litre bin to encourage use of the smaller bin.
- Inclusion of non traditional items into the kerbside collected recycle bins commencing in July 2014 eg. hard plastics such as food storage containers and toys and metal items such as pots, pans and oven trays.
- A long term contract through the Metropolitan Waste Management Group for composting of kerbside collected organics.
- A bundled (and residents own container) green waste collection service to be collected monthly commencing in July 2014.
- An at call residential hard waste collection where residents will be entitled to two collections per calendar year commencing in July 2014.
- A paper and cardboard collection service will be considered for Council venues to supplement the wheelie bin commingled collection service.
- The bulk bins provided to Council venues will be available in a 1.5 cubic metre size only collected weekly, if a paper and cardboard collection service is provided.
- Dedicated waste collection services for multi unit developments will be introduced in July 2014 that will use smaller collection vehicles, larger sized communal bins and varying collection frequencies.
- Council's transfer station continue to provide for the separate collection of commingled recyclables, paper and cardboard, e-waste including televisions and computers, toxic chemicals, furniture, electrical goods, building products. Council to nominate to be a collection site under the Sustainability Victoria Detox Your Home Program.
- Council to develop a waste education, communication and engagement plan to better communicate with Knox residents on how they can minimise the amount of material being placed in the waste bin.

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## List of Acronyms used

<b>ARRT</b>	Advanced Resource Recovery Technology
<b>C&amp;D</b>	Construction and Demolition (waste)
<b>C&amp;I</b>	Commercial and Industrial (waste)
<b>CPRS</b>	Carbon Pollution Reduction Scheme
<b>DPCD</b>	Department of Planning and Community Development (Victoria)
<b>DSE</b>	Department of Sustainability and Environment (Victoria)
<b>Hh</b>	Household (as in per Household)
<b>EPA</b>	Environment Protection Authority Victoria
<b>KPIs</b>	Key Performance Indicators
<b>MGB</b>	Mobile Garbage Bin (i.e. wheelie bin)
<b>MAV</b>	Municipal Association of Victoria
<b>MRF</b>	Materials Recovery Facility
<b>MSW</b>	Municipal Solid Waste
<b>MUD</b>	Multi Unit Development
<b>MWMG</b>	Metropolitan Waste Management Group
<b>NPC</b>	National Packaging Covenant
<b>PPR</b>	Public Place Recycling
<b>pP</b>	per Person or Resident
<b>RRC</b>	Resource Recovery Centre
<b>SIWMP</b>	Solid Industrial Waste Management Plan
<b>SMEs</b>	Small to Medium Sized Enterprises
<b>SV</b>	Sustainability Victoria
<b>TZW</b>	Towards Zero Waste
<b>VLAA</b>	Victorian Litter Action Alliance
<b>VARRI</b>	Victorian Advanced Resource Recovery Initiative
<b>WMS</b>	Waste Management Strategy

# 1 INTRODUCTION

## 1.1 PURPOSE

The *Waste Management Plan (WMP)* has been developed as part of the commitment Knox City Council has made to provide sustainable solutions for the collection, disposal and resource recovery from waste generated within our community. The *WMP* describes strategies and measurable actions to be undertaken by Knox City Council over the next seven years (2014 – 2021) to develop and improve current waste management practices. Sustainable approaches to waste management need to be integrated into all future policies, strategies and planning decisions made by Council.

The future directions of waste management within this municipality need to be consistent and work towards those of the region and Victoria as a whole. As such, the key drivers for this strategy are:

- Government policies relating to the Towards Zero Waste Strategy (and successive waste strategies) and targets;
- the need to deal with the projected population increases, changing demographic and housing type and economic growth of Melbourne, in terms of sustainability outcomes for waste and materials recovery;
- the need to manage and reduce greenhouse gas emissions and energy and water consumption; and
- Government policies and strategies seeking to increase energy generation from renewable sources.

The management of waste including kerbside collection and disposal, hard waste, litter, and other waste clearance activities is a major component of Council's annual budget and therefore needs to be appropriately managed and the risks mitigated to the fullest extent possible. Similarly, the management of waste can be the biggest single greenhouse gas generator by Council, including pollution from waste collection and transport and methane emissions from waste decomposing in landfill.

## 1.2 OVERVIEW OF MUNICIPALITY

### 1.2.1 Local residential properties (households) and population characteristics

**Table 1** *Population and households – current and projected obtained from City of Knox Population Forecasts 2006-2031 prepared by Forecast.id*

	2012 (last census)		2014 (Projected)		2020 (Projected)	
	Residents	Households	Residents	Households	Residents	Households
Number	155,030	56,030	156,860	57,120	164,640	60,960
Growth Rate			1.18%	1.94%	6.20%	8.80%

Forecast.id have also determined that different areas within the City of Knox have different functions based on both the era of development and amount of new housing opportunities. Boronia, Bayswater, Knoxfield, Rowville, Scoresby and The Basin are expected to attract some families and older adults and retirees, while losing relatively large numbers of young adults leaving home. Wantirna is expected to experience a large loss through migration in young adults leaving home to establish new

households elsewhere. Ferntree Gully by contrast is expected to attract family households again as the area regenerates.

There are also significant differences in the supply of residential property that will influence population and household futures within the municipality. Wantirna South, Rowville and Ferntree Gully are expected to experience the largest amount of new residential development over the forecast period, followed by Boronia and Bayswater which will generally take the form of medium density development. In the case of Rowville and Ferntree Gully, some small pockets of greenfield development will occur in the early forecast period. By contrast, The Basin and Upper Ferntree Gully are not expected to add significant numbers of new dwellings.

### 1.2.2 Non-residential properties and commercial and public sector organisations operating in the municipality

Knox City Council currently provides a range of different waste and recyclables collection services to non-residential properties such as pre-schools, care facilities (elderly and child), non rateable properties such as Opportunity Shops, Fire and Police stations and commercial and industrial premises such as shops, offices and factories. The services are optional and fees are charged for those not owned and operated by Council.

The service provided for commercial and industrial premises is for domestic waste (eg lunch wrappings) generated from the employees. It is not intended as a trade waste service.

An overview of the number of commercial and non-residential properties in the Knox municipality is detailed below in Table 2.

**Table 2 Commercial and non-residential properties in the municipality**

	2012 or most recent council survey	Growth rate	2020 (Projected)
Type of commercial and/or non-residential facility	Number of Properties	(%)	Number of Properties
Council run Pre schools, Maternal and Child Health Services	39	0.5%	40
Elderly residential care facilities –Hostels and Nursing Homes	27	10%	30
Non Rateable Properties	1554	8.8%	1690
Commercial and Industrial Properties	5807	8.8%	6310
<b>Total</b>			

\* Sourced from Healthy Ageing, Family & Children's Services and Property & Revenue Services Departments at Knox City Council.

### 1.2.3 Key Issues for the Municipality of Knox City Council

The following issues impact on waste management practices in Knox.

- Changing nature of residential development within Knox activity centres from single houses on relatively large sized blocks of land with long (10m+/property) individual street frontages to multi unit developments (MUDs) such as townhouses, apartments and units.
- Clusters of multi unit dwellings (MUDs) with high resident (tenancy) turnover, incidences of illegal dumping of hard waste items on the naturestrip, recycling contamination and lower rates of recycling.

- Multi unit developments - ensuring waste services offered to residents in units, flats and apartments are equivalent to that provided by Council to traditional single-occupancies, particularly if a private service is proposed, eg collection services using larger shared/communal bins or smaller collection vehicles emptying individual bins within the development site.
- Hard waste collection - items out too early or after collection, scavenging, re-sale of recovered goods. Increase in illegal dumping activity on Council road reserves and in parks.
- Green waste collection - quantity collected higher than other similar sized Councils.
- Cigarette butt dispensers for shopping centres - has not been a service provided by Council to date. Cigarette butts are a significant litter issue.
- Waste education - service provided by receipt of recyclables service provider under contract and by Council's Sustainable Futures Team. Uncertainty as to the impact this is having in educating residents on how to recycle correctly and minimise their waste disposal.
- Changing demographic of Knox.
- Increasing recyclables recovery - recovery of paper and cardboard from Council venues ie. Community Centres, Sporting Groups.
- Contamination in the recyclables bin - plastic bags containing recyclables in household recycle bins, plastic wrap in commercial recycle bins, confusion with plastic bags that have the recycle symbol and polystyrene trays.
- E-waste recycling - Federal Government has funded collection from drop off points such as transfer stations.
- Number of properties cleared on Friday is larger than the other days of the week. Collection areas require reviewing to correct imbalance.
- Bin collection in streets without a defined vehicle turnaround area - use of vehicle crossings versus reversing along the street with one sided collection or use of smaller collection vehicles or a driver with jockey.
- Increasing costs for domestic waste disposal with State Government landfill levy and Federal Government carbon tax being added to the gate fee.

### 1.3 WASTE MANAGEMENT OVERVIEW

The WMP incorporates the strategies and actions for the management of a variety of waste materials. The focus of the plan is on Municipal Solid Waste (MSW) although, where appropriate, the plan addresses Commercial and Industrial (C&I) waste and Construction and Demolition (C&D) waste.

#### 1.3.1 Local Waste Management

Waste management in Knox City Council covers the strategic planning and management of a wide range of activities including:

- Collection of waste and recyclables at the kerbside from residential, mixed use properties (such as pre-schools, care facilities, Council-run facilities, commercial and industrial properties) in wheelie bins, including:
  - Commingled recyclables;
  - Green organics;
  - Garbage (domestic waste);
  - Hard waste, including metals and mattresses;
  - Bundled green waste (branches, shrubs etc.).
- Street litter collection (including street litter bins).



- Street sweeping.
- Public Place Recycling (PPR) including from Council venues.
- Collection of illegally dumped waste, usually hard rubbish.
- Collection of waste and recyclables generated at local Festivals and Events.
- Management and operation of Knox Transfer Station which includes the re-use shop and hard waste processing facility.
- Drop-off of household hazardous/toxic waste through the Detox Your Home Program.
- Drop off of motor oils, paint, car batteries, gas bottles, soil, rubble and building demolition material, e-waste and recyclables at the Knox Transfer Station for a fee.
- Collection of bulk bins for waste provided to Council venues including Community Centres and Sporting grounds.
- Rehabilitation of two former landfill sites being Cathies Lane and Llewellyn Park to meet EPA requirements imposed on the sites including leachate and landfill gas extraction and monitoring of groundwater and landfill gas.

The budget to provide these services for the 2012/2013 year was \$6.47 million. This cost is expected to increase to \$7.4 million by 2020/2021 under Council's Long Term Financial Strategy. This does not include the capital works component of the landfill site rehabilitation which is yet to be determined.

# 2 STRATEGIC FRAMEWORK

## 2.1 STRATEGIC CONTEXT

The WMP has been developed in accord with relevant legislation and policies that have been developed at both the Federal and State level. These documents include:

- *Environment Protection Act (EP Act) 1970*, with Amendment in 2006.
- Federal Government's *National Waste Policy*, launched in late 2009.
- Victorian State Government's *Towards Zero Waste Strategy (TZW)* released in 2005 and the Victorian Government's revised *Waste Policy Getting Full Value – The Victorian Waste and Resource Recovery Policy* released in April 2013.

The waste management industry, of which Knox is a party, is highly regulated and controlled, both in terms of collection and disposal.

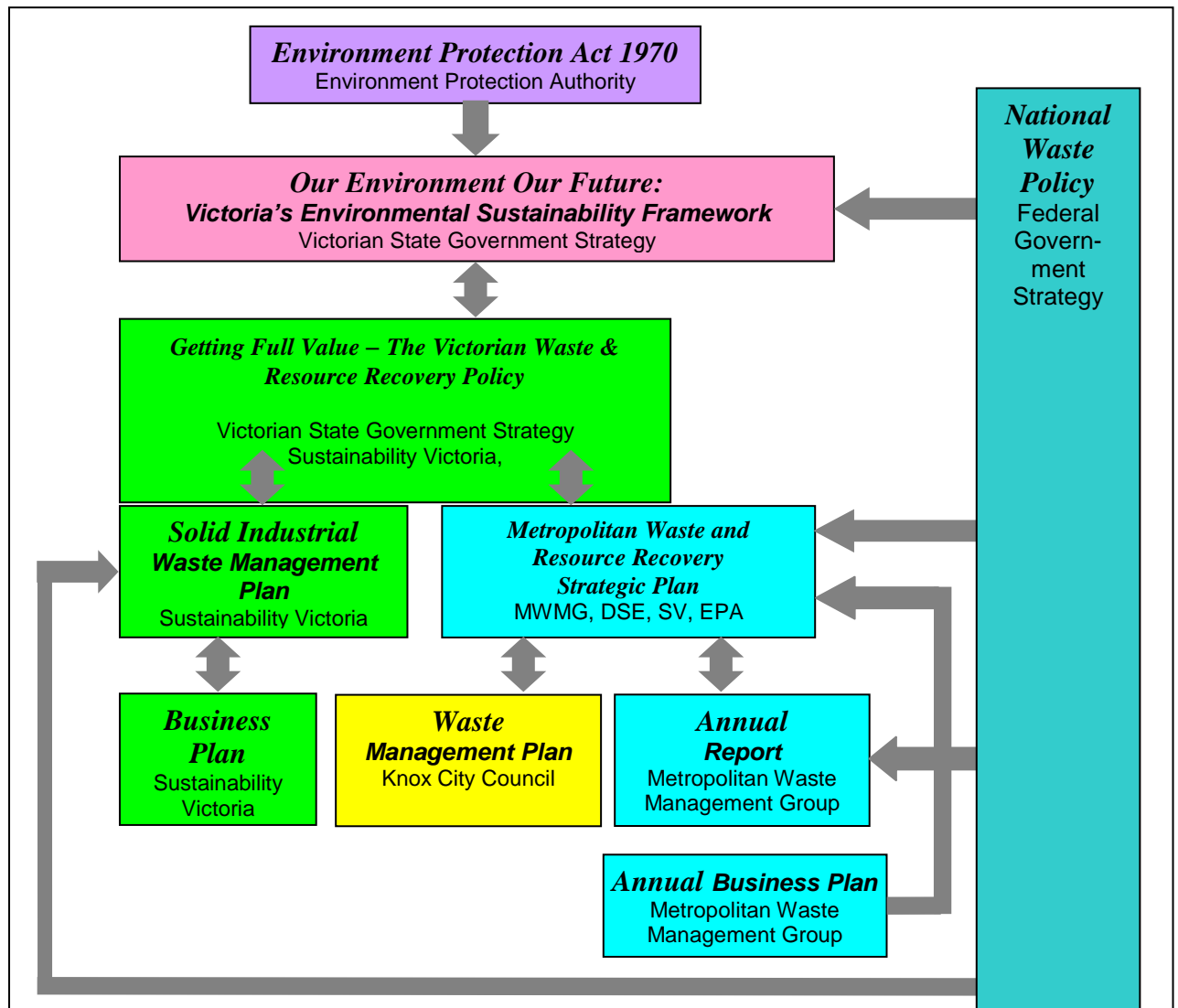
Proposed changes in regard to advanced waste treatment and the management of organics will see significant costs flowing on to Council and the community.

The cost increases are being driven through the Landfill Levy which will increase from \$9 per tonne in 2009/10 to \$58.50 per tonne in 2014/15. The State Government has introduced this as a strategy to make the cost to take waste to landfill equivalent to processing waste through an Advanced Waste Treatment facility. This will see Council paying approximately \$120 per tonne for waste disposal in 2014/15 compared with \$55 per tonne in 2009/10.

This is aside from the strict regulations that govern the collection and disposal of waste including Occupational Health and Safety, Mass Management and Environment Protection Authority regulations.

Figure 1 below illustrates how the legislation, policies and strategic plans by various agencies of government are considered and integrated with the Waste Management Plan of Knox City Council.

**Figure 1 Interlinking of Legislation, Policies and Plans**

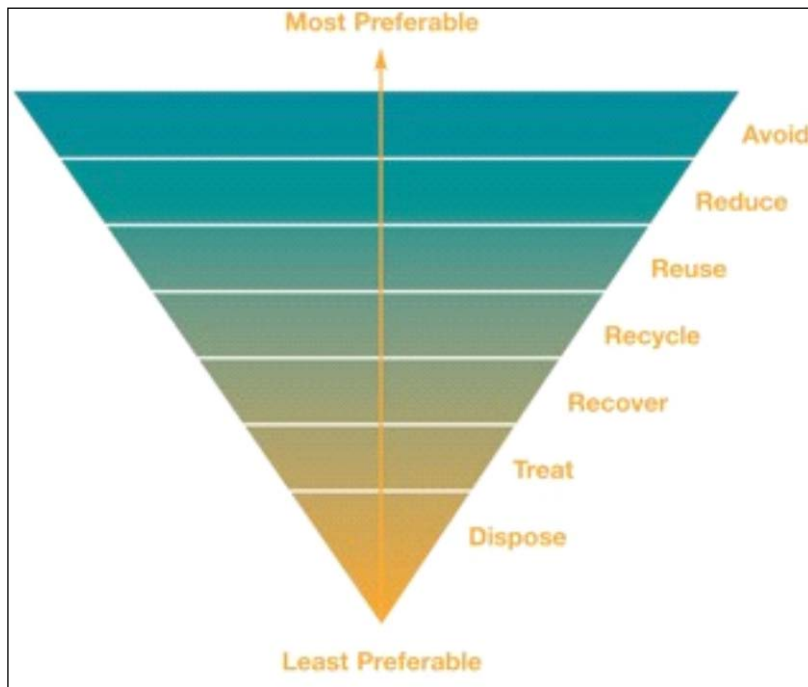


The objectives and targets developed in these overlying policies and strategies have been utilised to form the *Solid Industrial Waste Management Plan* (SIWP) and the *Metropolitan Waste and Resource Recovery Strategic Plan* (the Strategic Plan). Finally, Knox City Council's *Waste Management Plan* has been developed to ensure that the objectives and targets of the Federal and State Government policies will influence waste management activities in the community and can be implemented at a local level.

The key principle underpinning this WMP is the waste management hierarchy, which was disseminated under the *Environmental Protection Act 1970*. The waste management hierarchy places waste avoidance as the most preferred option and waste disposal the least preferred.

All the policies developed by all levels of government are based on this principle.

**Figure 2 Waste Management Hierarchy**



## 2.2 SIGNIFICANT FEDERAL AND STATE LEGISLATION AND POLICIES

Key legislation and policies of the different levels of government, include, but are not limited to:

### 2.2.1 Federal Government

- **National Waste Policy: Less Waste, More Resources** – this policy sets the outcomes, directions and strategies for action for the next ten years with regard to waste management in Australia.
- **Clean Energy Future Plan** – framework for reducing carbon pollution in Australia. The scheme was introduced on 1 July 2012 and is based on the introduction of a carbon pricing mechanism with a carbon price fixed for three years until July 2015 when the price will then be market based. Will apply to disposal of waste to landfill, including municipal garbage and hard waste.
- **National Packaging Covenant (NPC)** - voluntary initiative by government and industry to reduce the effects of packaging on the environment.
- **National Television and Computer Recycling Scheme which aims to lift the television and computer recycling rate from 17% to 80% by 2021/2022.** This is being funded and run by the television and computer Industry through the Federal Government.

### 2.2.2 State of Victoria

- **Towards Zero Waste Strategy 2005 (TZW)** - objectives of TZW are to reduce and recover solid waste and to reduce the environmentally damaging impacts of waste. The three key targets of the TZW strategy are:

- Reduce the amount of solid waste generated by 1.5 million tonnes per annum by 2014, compared to 2002/03.
- Increase the recovery rate in all solid waste generated from the current 48% (2003) to 75% by 2014 comprising:
  - 65% recovery rate (by weight) of MSW for reuse and recycling by 2014. An interim target of 45% recovery rate is established for year 2008-09;
  - 80% recovery (by weight) of Commercial and Industrial (C&I) waste for reuse and recycling by 2014. An interim target of 65% is established for year 2008-09; and
  - 80% recovery rate (by weight) of Construction and Demolition (C&D) waste for reuse and recycling by 2014. An interim target of 65% is established for year 2008-09.
- 25% reduction in littering behaviour compared with 2003 levels.
- **The Victorian Waste and Resource Recovery Policy** This policy was released in April 2013 and replaces the abovementioned Towards Zero Waste Strategy. The Victorian Government is committed to an integrated, state-wide waste and resource recovery system that protects the environment and public health, maximises the productive value of resources, and minimises long-term costs to households, industry and government. *Getting full value: the Victorian Waste and Resource Recovery Policy* sets a 30 year vision for waste and resource recovery in Victoria with policy priorities that will guide actions over the next ten years. The policy is a component of the Victorian Government's economic and environmental strategies, as set out in *Securing Victoria's Economy: Planning, Building, Delivering and Environmental Partnerships*. It will help drive future economic productivity for the state through the growth and improvement of waste management and resource recovery industries. Concurrently, it will resolve some of the challenging environmental and public health problems posed by waste in Victoria.
- **Victorian Litter Strategy – Creating Cleaner, Safer Places** – strategy to prevent litter and improve litter management practices to meet the TZW littering behaviour target and achieve clean and safe public places.
- **Victorian Advanced Resource Recovery Initiative (VARRI)** - to facilitate the development of ARRT facilities in metropolitan Melbourne (program has been discontinued).
- **Solid Industrial Waste Management Plan** - developed to establish goals and targets for solid waste management (e.g. C&I and C&D waste) in Victoria.
- **Other waste issues or initiatives** include, but not limited to:
  - Eco-Buy or similar programs that encourages the purchasing of environmentally preferable products and services;
  - current and future disposal costs and landfill levies;
  - other EPA policy initiatives;
  - product stewardship programs;
  - contaminated soils and hazardous waste initiatives; and
  - occupational health and safety, WorkCover and WorkSafe guidelines and standards.

## 2.3 METROPOLITAN WASTE MANAGEMENT GROUP

The Metropolitan Waste Management Group (MWMG) is a Victorian state agency, established under the Victorian Environment Protection (Amendment) Act 2006.

### **2.3.1 MWMG Objectives and Targets**

In general terms, the MWMG is responsible for coordinating municipal waste management activities in Melbourne on behalf of the 30 Melbourne metropolitan councils. Fulfilling this function involves:

- advising metropolitan Councils on best practices in municipal waste management and resource efficiency;
- entering into and managing contracts and arrangements to develop and facilitate waste management services for metropolitan councils; and
- assessing the need, and planning for, municipal waste management infrastructure and landfills in metropolitan Melbourne.

In line with the TZW strategy, the MWMG's targets include:

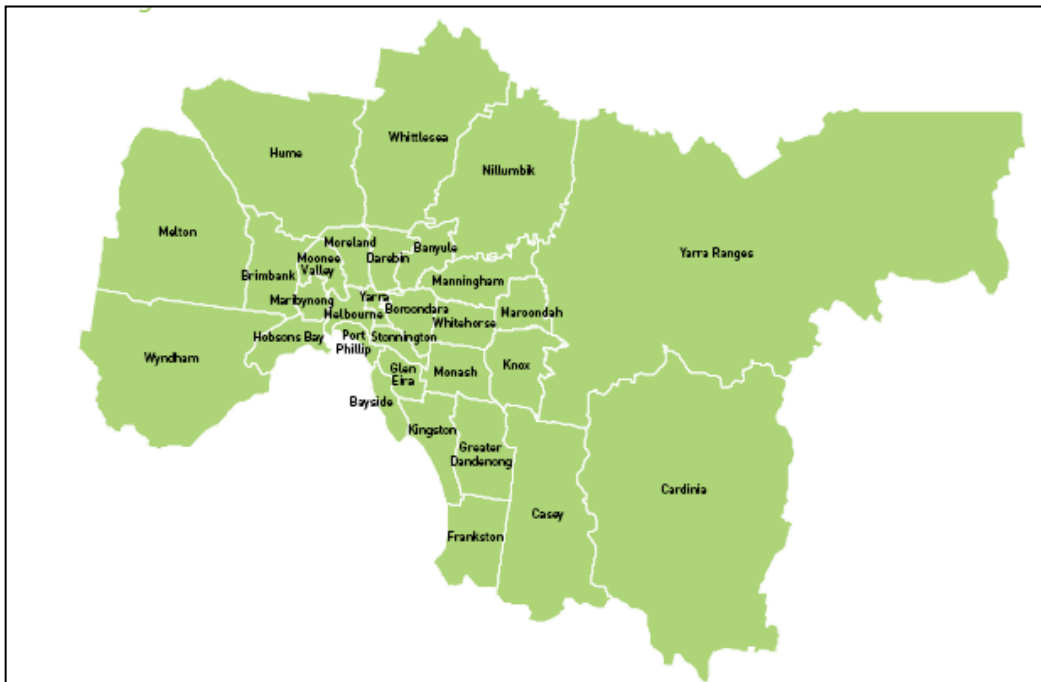
- A 45% recovery rate (by weight) of MSW for reuse and recycling by 2008-09;
- A 65% recovery rate (by weight) of MSW for reuse and recycling by 2014; and
- A 25% improvement in littering behaviour by 2014.

### **2.3.2 Metropolitan Waste Resource and Recovery Strategic Plan**

The Strategic Plan has been developed by MWMG in three separate parts: the Metropolitan Plan, the Municipal Solid Waste Infrastructure Schedule and the Metropolitan Landfill Schedule. MSW consists primarily of material discarded by households for collection from the kerbside. By weight between 40 and 50 per cent of the contents of the average household bin for residual waste (or "garbage") consists of food and garden organics. Accordingly, the Strategic Plan has a focus on MSW, and the organics component in particular.

A step change in the way the residual waste and garden organics streams are managed is proposed in the Strategic Plan. It is proposed that recyclable materials and the readily degradable organic fractions of residual wastes be recovered in purpose built Advanced Resource Recovery Technology facilities (ARRTs) across Melbourne to be established in the future.

The Plan assesses the current waste management situation in metropolitan Melbourne and sets out a framework for the future management of municipal and commercial wastes in metropolitan Melbourne. The framework and recommendations included in the Strategic plan aim to influence the waste management programs and activities of the thirty councils of metropolitan Melbourne (see Figure 3).



**Figure 3 Geographical Boundaries of Metropolitan Local Governments (Source: Victorian Government, 2009, 'Metropolitan Waste and Resource Recovery Strategic Plan')**

## 2.4 KNOX CITY COUNCIL PLANS, POLICIES AND STRATEGIES

### 2.4.1 Business Plan/Corporate Plan

#### Knox City Plan 2013-2017

In 2013, Knox developed a new planning framework that links Council's major strategic documents to provide a single focus in order to achieve the vision for the City. The City Plan establishes clear objectives for the medium term (four years) that describes the outcomes required to achieve the vision. The City Plan includes strategic objectives under the theme of Vibrant and Sustainable Built and Natural Environments which is linked to waste generation and recycling (City Strategy 3.1.4).

### 2.4.2 Council Waste Management Policy

Council has developed a number of Plans and Policies to inform the delivery of waste services to the Knox community:

- Waste Management Plan 2006-2013
- Eligibility for Waste Services, 2009
- Placement of Litter and Public Place Recycling Bins, 2013
- Waste Management in Multi Unit Developments (policy and procedure), 2012

### 2.4.3 Sustainable Environment Strategy 2008-2018

Council has developed Plans to manage our changing city in terms of social, economic and environmental drivers of change needed to achieve sustainable outcomes:

- Climate Change Response Plan 2012-2022
- Knox Open Space Plan 2012-2022

#### **2.4.4 Local laws**

Council has developed the General Provisions Local Law 2010 to better manage the impact of the waste services provided by Council on the amenity requirements of our community:

General Provisions Local Law 2010 Section 5 - Waste Collection Service.

#### **2.4.5 Planning Design and Development Provisions**

Applicants for planning permits for multi unit developments are required to address the provisions contained in the 'Waste Management in Multi Unit Developments' Policy and Procedure.

This includes preparation of a site specific waste management plan that addresses:

- the volume and type of waste to be generated;
- how the wastes (including reusable and recyclable materials) are to be stored and treated on-site; and
- how the residue is to be disposed of.

The waste management plan should include a site plan indicating provision for waste, recycling and hard waste storage areas and the location of waste collection points. If a private waste collection contractor is proposed for the development, a waste management plan is also required to be completed which provides the above information which must satisfy Council that the service will be equivalent to that provided by Council for residential premises.

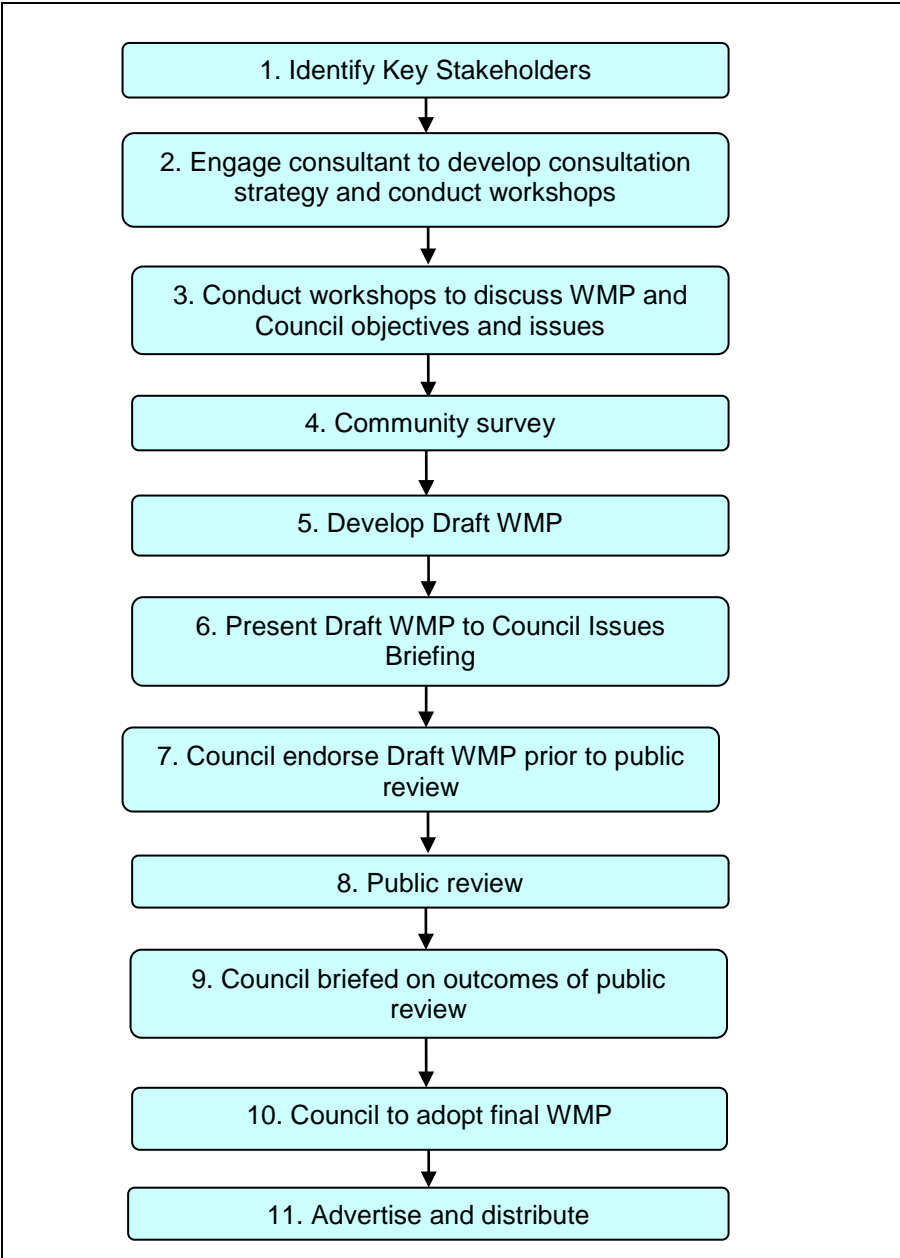
Applicants for a planning permit for residential broad acre developments are required to address the waste management provisions contained in the 'Engineering Guidelines for Development' document.



# 3 CONSULTATION AND ENGAGEMENT

## 3.1 STAKEHOLDER IDENTIFICATION AND ENGAGEMENT

Figure 4 below displays the process followed by Knox City Council in developing the WMP. This involved the identification and engagement of stakeholders to get their input into the Plan.



**Figure 4 Waste Management Plan Development**

Table 3 displays stakeholders that were engaged in the development process.

**Table 3 Table of identified stakeholders**

Internal stakeholders	External stakeholders
<ul style="list-style-type: none"> <li>• Councillors</li> <li>• Manager Sustainable Infrastructure</li> <li>• Operations (Parks, Works)</li> <li>• Waste Management</li> <li>• Executive Management Team</li> <li>• Sustainable Futures</li> <li>• Events/ Place Management</li> <li>• Planning</li> <li>• Local Laws</li> <li>• Property Revenue(rates)</li> <li>• Environmental Advisory Committee</li> <li>• Knox Transfer Station and Management Advisory Committee</li> <li>• Recreation and Leisure Liaison Group</li> <li>• Customer Service</li> </ul>	<ul style="list-style-type: none"> <li>• Local community/residents (representative group)</li> <li>• MWMG</li> <li>• Sustainability Victoria</li> <li>• Waste Service providers- Remondis, Cleanaway, KS Environmental, RG &amp; JA Lever,</li> <li>• Relevant waste management facility operators (landfills etc) – Sita Environmental Solutions, TPI Cleanaway</li> <li>• Operators of recyclables processing facilities (MRFs, green organics)- Visy Recycling, Knox Transfer Station</li> </ul>

**3.2 STAKEHOLDER CONSULTATION FEEDBACK**

A summary of the feedback that was received from the stakeholder engagement process is attached as Appendix A.

**Key Issues/ Opportunities for Improvement**

The following are representative comments from the consultation engagement process:

**Recycling Service**

Would be good if kitchen utensils and small appliances could go into the recycle bin, rather than having to put in the rubbish.

Option for larger size bins would be useful, or an option to have another recycling collection if needed for festive times, etc.

Confused about what materials can go into bins – for example pizza boxes and frozen dinner plastic bowls, etc. In or out?

**Green Waste Bin Service**

Residents should be able to choose smaller green waste bins as 240 litre green waste bin may be too large for some residents.

Replace current loose green waste collections from fortnightly to a twice per year bundled collection.

Comments included that it is a good idea to put food with green waste, but also that Council should encourage home composting.

Reducing the standard size of garbage bin and encouraging greater take up of the smaller bin could be introduced using price levers and will result in a reduction of waste to landfill.

### **Garbage Service**

Belief that some people think they have 80 litre bin even though they have a 120 litre because it is 'smaller' than the recycling/garden waste bins.

Believe that Council should undertake a concerted promotion to advise residents that they can downsize and save (as several weren't aware a smaller sized bin was available).

The resident focus group were very positive about the community's willingness and ability to take such changes on board, so long as reasons are provided ('don't dumb it down') and instructions are provided on what to do.

So long as food is still collected weekly it would be fine to change the frequency of 'residual' waste.

### **Green Waste Bundled Service**

Strong recommendation that limits should be placed on quantity of hard waste and bundles of green waste to be placed out.

Loose and bundled fortnightly green waste collections are not the norm at other Councils and could be considered over servicing – could be reduced.

Replace current loose green waste collections from fortnightly to a twice per year bundled collection.

### **Hard Waste Service**

At-Call collection services for hard waste is the best means of maximising recycling.

At-Call collection should include one customer service (call centre) managing receipt of calls for a service and mailing out confirmation and sticker to keep everything in one administration area.

Council should call tenders for receipt of hard waste.

Hard waste collections can be improved e.g. At-Call collections seem to be a good standard 2 per year with limit on quantity 2 – 4 metres collected from front yards.

People who live in areas with At-Call collections say At-Call service is good. Put it in front of your yard instead of kerbside – is this an option for Knox?

### **Waste Education**

Waste education is important.

Waste education is the key but is often a "side stepped issue" and must include enforcement that is unpopular.

Waste education programs are not reviewed frequently.

Support for behavioural change is needed.

### 3.3 COMMUNITY SURVEY

A Community Survey, including questions with regard to Council's existing waste services and proposed options for future services was undertaken in May 2013. The survey was mailed to 2,500 randomly selected properties across the municipality with a response being received from 751 households which is a statistically valid 26% response rate. The questions and responses are provided in Appendix B.

#### ***Key Issues identified in the survey***

- There is a high level of satisfaction with the current garbage and recyclables collection service.
- There is an opportunity to provide additional information and raise awareness about the waste services provided which will reduce the amount of waste going to landfill. In particular the options available in the size of garbage bin, the existence of a user pays green waste bin and the opportunity to drop off recyclables free of charge at the Knox Transfer Station.
- Approximately 71% of the surveyed residents use the user pays green waste service.
- Approximately 35% of the surveyed residents use the "no extra charge" bundled/own container green waste service.
- Approximately 70 % of the surveyed residents who use the bundled and residents own container green waste service use it monthly or less.
- Approximately 36% of those surveyed residents that use the hard waste service support moving from the twice yearly scheduled collection service to a twice yearly at call collection service.
- There was moderate support for providing a more frequent or larger recycling service but only if there was no increase in rates.

#### ***Opportunities for Improvement identified in the survey***

- Develop an education, communication and engagement plan to assist in the implementation of the waste education component of the Waste Management Plan.
- Include information in the waste guide that is delivered annually to residents about the waste service options available to residents.
- Propose a reduction in the collection frequency of the green waste bundled and residents own container service from fortnightly to three monthly or six monthly and introduce a limit on the quantity to three cubic metres per collection.
- Propose a change in the hard waste service from two scheduled collections per annum to two at call collections per annum and introduce a limit on the quantity to three cubic metres per collection.

# 4 CURRENT WASTE MANAGEMENT

## 4.1 INTRODUCTION TO WASTE MANAGEMENT OPERATIONS

### 4.1.1 Residential waste collection services

Information on the kerbside collection services provided to residential properties by Knox City Council is included in Table 4:

**Table 4** Current Council waste services to residential properties

Waste type	Type of service	Type of container	Frequency	Type of waste materials and exclusions	Number of services in 2012/2013 & Participation rate
Residential Garbage	Kerbside collection	Mostly 120L MGB, with option for smaller 80L bin (with rate reduction) or an extra 120L service (extra charge)	Weekly	All household, non hazardous waste	58,460 120L = 37,985 80L = 19,579 120L extra = 896 100% participation
Residential Garbage	Multi-unit dwellings (MUD)	240L, 660 L, 1100L MGB, with 120L rates surcharge if applies with ratio	Weekly	All household, non- hazardous waste	3 properties
Residential Commingled Recyclables	Kerbside collection	240L MGB, with option for an extra service (extra charge)	Fortnightly	Paper and cardboard, Plastics 1-7 Glass containers, Metal containers etc.	57,029 100% participation
Residential Commingled Recyclables	Multi-unit dwellings (MUD)	240L, 660 L, 1100L MGB,	Weekly/ fortnightly	Paper and cardboard, Plastics 1-7, Glass containers, Metal containers etc.	2 properties
Residential Green Organics	Kerbside collection	Bundled and own container, Optional, user pays 240L MGB, option for extra bin (with extra charge)	Fortnightly	Organic garden/green waste only, no other contaminants etc.	56,250 properties have access to bundled/own container service, participation rate unknown 40,554 user pays green waste bins, approx participation rate 70%.

Waste type	Type of service	Type of container	Frequency	Type of waste materials and exclusions	Number of services in 2012/2013 & Participation rate
Residential Hard waste	Scheduled	Collected from nature strip	Twice per annum	No limit on size, mattresses, metals to be piled separately, no green organics, hazardous waste or chemicals, etc.	56,250 properties have access to hard waste service, participation rate unknown – estimated to be 90%

#### 4.1.2 Non-residential waste collection services

Information on the kerbside collection services provided to non-residential properties by Knox City Council is provided in Table 5 below. Non-residential properties include pre- schools, care facilities (elderly and child), non rateable properties such as Opportunity Shops, Fire and Police stations and commercial and industrial premises such as shops, offices and factories.

**Table 5** *Current Council waste services to non-residential properties*

Waste type	Type of service	Type of container	Frequency	Type of waste materials and exclusions	Number of services in 2012/2013 & Participation rate
Commercial Garbage	Kerbside collection	Mostly 240L MGB, with options for 120L limit of two bins- user pays	Daily/ Weekly	All household, not hazardous waste such as asbestos, chemicals etc.	2,320 Weekly = 2,170 Daily = 150 Participation rate unknown as many properties have more than one service
Commercial Commingled Recyclables	Kerbside collection	Mostly 240L MGB, limit of two bins- user pays. Only provided to premises using the garbage service	Weekly	Dry paper and cardboard, Plastics 1-7, Glass containers, Metal containers etc.	1,904 Overall commercial participation rate unknown, participation for properties with garbage service 82%

Waste type	Type of service	Type of container	Frequency	Type of waste materials and exclusions	Number of services in 2012/2013 & Participation rate
Exempt Properties Garbage, Recycling and/or bin- based Green Organics	Kerbside collection for Non-rateable properties, inc churches, charities, etc	Can have access to Councils waste services at a reduced fee, inc weekly 120L or weekly 240L garbage with fortnightly recycling bin included. Optional user-pays Green Organics as per residential service	Weekly garbage or daily garbage, fortnightly recycling & green waste	As per Residential Services	382 Overall participation rate unknown as is individual service participation rate (recycling & green organics included in residential figures)

#### 4.1.3 Other waste collection services

Council also provides a range of other waste collection services within the municipality. Details of these services are provided in Table 6 below:

**Table 6 Summary of other waste collection services**

Waste type	Type of service	Type of container	Frequency	Type of waste materials and exclusions	Number of services in 2012/2013
Street sweeping	Collection		Five Weekly cycle	Leaf material, dumped litter, lawn clippings	N/A
Street cleaning and dumped rubbish	Collection		Reactive service as required	Hard waste, mattresses, tyres, TVs, etc.	400t estimated collected
Litter bins	Collection	120L MGBs in fixed metal frames or attached to pedestals	Varies from daily to twice weekly	Waste resulting from purchases at nearby shops and reserve patrons' picnics/BBQs	753
Public place recycling	collection	120L MGBs in fixed metal frames or 240L MGBs attached to pedestals or provided loose for use of venue user	Weekly	Bottles, cans, etc	PPR = 89 (mostly 120L) Clubs = 134 (all 240L)

Waste type	Type of service	Type of container	Frequency	Type of waste materials and exclusions	Number of services in 2012/2013
Events (festivals, local markets, cultural/community events etc.)	Collection	240L MGB	During and/or after event	All waste from event, which fits in a 240L MGB. Other waste collection arranged by event organiser	Stringybark Festival Knox Festival Carols by Candlelight Some sports finals
Bulk Bins at Council Venues & Commercial services at Dorset Square Waste Compound	Collection	1.5, 3.0 and 4.5 cubic metre bins	Varies from weekly to daily	Waste from activities of venue users	45 sites 57 bins, 5 x 240L commingled recycling 5 x 1100L garbage 19 x 1500L garbage 24 x 3000L garbage 1 x 3000L cardboard & 2 x 4500L cardboard

### Overview of current Council waste contracts

**Table 7 Overview of waste contracts**

RESIDENTIAL COLLECTIONS			
Garbage collection	Remondis Australia	Hallam Depot Waste disposal to Hampton Park landfill	29/06/2014
Garbage disposal to landfill	SITA Australia for solid putrescible waste TPI-Cleanaway for inert hard waste	Hampton Park Clayton	31/03/2016 plus 3 No. 2 year extensions
Green Organics collection (bin based)	Remondis Australia	Hallam Depot Material to Wantirna South & Dingley	29/06/2014
Green Organics receiptal	MWMG	Enviromix & KTS	30/09/2012 plus 2 No. 1 year extensions
Green organics collection(bundled)	TPI-Cleanaway	Bayswater Depot	30/06/2014



<b>RESIDENTIAL COLLECTIONS (cont'd)</b>			
Commingled recyclables collection	Remondis Australia	Hallam Depot Material to Springvale	29/06/2014
Commingled recyclables receipt	Visy Recycling	Springvale MRF	29/06/2014
Hard waste	TPI-Cleanaway	Bayswater Depot	30/06/2014
<b>NON-RESIDENTIAL COLLECTIONS</b>			
Garbage collection	Remondis Australia	Hallam Depot Waste disposal to Hampton Park landfill	29/06/2014
Garbage disposal to landfill	SITA Australia for solid putrescible waste TPI-Cleanaway for inert hard waste	Hampton Park Clayton	31/03/2016 plus 3 No. 2 year extensions
Commingled recyclables collection	Remondis Australia	Hallam Depot Material to Springvale	29/06/2014
Commingled recyclables receipt	Visy Recycling	Springvale MRF	29/06/2014

<b>OTHER WASTE COLLECTIONS</b>			
Street sweeping and disposal	In house team	Operations Centre, Wantirna South, material to Knox Transfer Station, Wantirna South	N/A
Street Cleaning and dumped rubbish collection and disposal	In house team	Operations Centre, Wantirna South, material to Skips at Operations Centre and Knox Transfer Station, Wantirna South	N/A
Litter bins Collection and disposal	RG & JA Lever	Gladysdale & Bayswater Depots Material to Hampton Park	30/06/2014 plus 2 year extension
Public Place Recycling (PPR) bins Collection	RG & JA Lever	Gladysdale & Bayswater Depots Material to Springvale	30/06/2014 plus 2 year extension
PPR receipt	Visy Recycling	Springvale MRF	29/06/2014
Events waste collection and disposal	RG & JA Lever KS Environmental	MGBs – Lever, Gladysdale Bulk bins – KSE, Dingley	30/06/2014 plus 2 year extension 30/06/2015 plus 2 year extension
Operation and Management of Waste transfer station and/or Resource Recovery Centre	Knox Transfer Station Pty Ltd	Wantirna South	31/12/2022 plus 5 year extension

## 4.2 WASTE COMPOSITION AND QUANTITIES

### 4.2.1 Waste and recyclables collected in the municipality

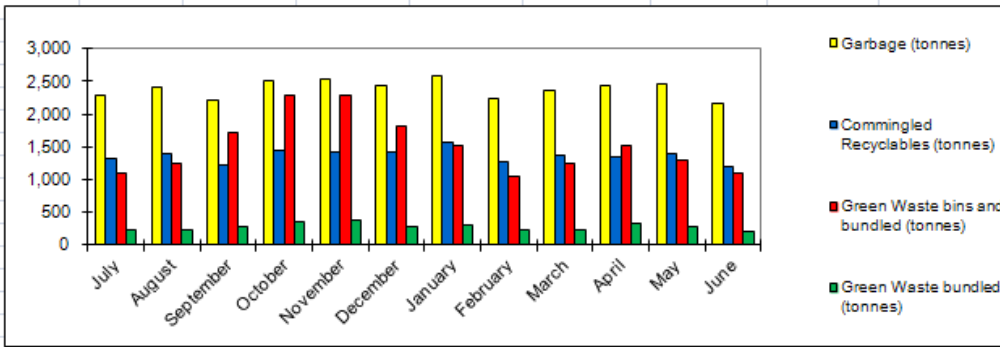
Quantities and composition of waste and recyclable materials collected from across the municipality are detailed below:

**Table 8 Quantities of waste and recyclable materials collected from residential, commercial and non-rateable properties in 2012/2013**

	Recycled	Disposed to landfill	kg / Hh / yr (generated)
	Tonnes	Tonnes	Kgs
Garbage		28,661	497.90 (based on 57,564 properties using Council's waste services)
Commingled Recyclables	16,433		285.47 (based on 57,564 properties using Council's waste services)
Green waste – user pays bin	14,797		364.96 (based on 40,544 residential properties)
green waste- bundled and residents own container	3,338		59.57 (based on 56,030 residential properties)
Hard Waste	164t (steel only) 9,472 = number mattresses recycled	5,715	102 waste & 2.93 steel recycled (based on 56,030 residential properties)
Litter & PPR	46	222	
Bulk Bins	TBA		
<b>Total of waste and recyclables generated</b>	<b>34,778</b>	<b>34,598</b>	
Diversion Rate (%)	<b>50.13</b>		

**Table 9 2012/13 Knox City Council waste a recycling tonnage data**

Month	Garbage (tonnes)	Commingled Recyclables (tonnes)	Green Waste bins and bundled (tonnes)	Green Waste bundled (tonnes)	Kerbside Waste Recycled (%)	Hard Waste Collected (tonnes)	Hard Waste Recycled (tonnes)	Hard Waste Recycled (%)	Mattresses collected (#)	Litter collected (tonnes)	PPR collected (tonnes)	PPR recycled (%)
July	2,285	1,317	1,087	222	51.26%	7		0.00%		16	4	20.58%
August	2,417	1,408	1,236	230	52.24%			#DIV/0!		17	3	15.86%
September	2,221	1,227	1,717	292	57.00%	504	25	4.75%	970	17	3	15.67%
October	2,504	1,452	2,296	360	59.95%	827	52	5.96%	1147	21	4	16.91%
November	2,528	1,431	2,290	381	59.54%	1,156	12	0.99%	1967	22	4	15.10%
December	2,436	1,420	1,806	272	56.98%	84	0	0.00%	14	21	4	16.94%
January	2,591	1,575	1,511	302	54.35%			#DIV/0!		16	4	19.13%
February	2,245	1,284	1,051	228	50.98%			#DIV/0!		17	4	18.86%
March	2,354	1,363	1,235	231	52.47%	388	18	4.49%	612	21	4	15.61%
April	2,438	1,354	1,520	330	54.11%	1,078	32	2.90%	1608	19	5	19.00%
May	2,469	1,395	1,285	275	52.05%	1,223	10	0.84%	2461	19	3	15.59%
June	2,172	1,207	1,100	213	51.51%	447	14	3.07%	693	15	3	17.68%
<b>TOTAL</b>	<b>28,661</b>	<b>16,433</b>	<b>18,135</b>	<b>3,338</b>	<b>54.67%</b>	<b>5,715</b>	<b>164</b>	<b>2.87%</b>	<b>9472</b>	<b>222</b>	<b>46</b>	<b>17.17%</b>



**Table 10 Audit of residential waste and recycle bins**

**Note: This is obtained from the waste audit undertaken on the waste and recycle bins from 100 randomly selected properties across the municipality.**

Data from Knox City Council 2012 Waste Audit

<b>GARBAGE</b>	<b>TOTAL (KG)</b>	<b>% of Total</b>	<b>No. of Bins</b>	<b>Weight Per Bin</b>
Recyclable Containers	52.35	5.3%	98	0.53
Recyclable Paper/Card	27.25	2.8%	98	0.28
Garden Materials	16.94	1.7%	98	0.17
Food	453.14	46.1%	98	4.62
Polystyrene (block only)	1.32	0.1%	98	0.01
Hard plastic containers, toys, plant pots	4.56	0.5%	98	0.05
Kitchen Pots / Pans	1.80	0.2%	98	0.02
General Waste	425.29	43.3%	98	4.34
<b>TOTAL</b>	<b>982.65</b>		<b>98</b>	<b>10.03</b>
<b>RECYCLING</b>	<b>TOTAL (KG)</b>	<b>% of Total</b>	<b>No. of Bins</b>	<b>Weight Per Bin</b>
Recyclable Containers	354.08	31.6%	99	3.58
Recyclable Paper/Card	581.48	51.9%	99	5.87
Bagged Recyclables	59.88	5.3%	99	0.60
Garden Materials	0.32	0.0%	99	0.00
Food	17.63	1.6%	99	0.18
Polystyrene (block only)	1.57	0.1%	99	0.02
Hard plastic containers, toys, plant pots	8.93	0.8%	98	0.09
Kitchen Pots / Pans	2.10	0.2%	99	0.02
General Waste	95.12	8.5%	99	0.96
<b>TOTAL</b>	<b>1,121.11</b>		<b>99</b>	<b>11.32</b>

**Note that food makes up 46.1% of the material in the waste bin.**

**Table 11 Materials received and recycled at Knox Transfer Station, George Street, Wantirna South**

**Incoming Material – tonnes**

<b>Material</b>	<b>2011/12 (tonnes)</b>
Bricks	40
Clean Concrete & Rubble	1,363
Clean fill	508
Council Mixed Hard Waste	16,644
Free Drop Off	302
Green waste	1,180
Green waste – MWMG <sup>1</sup>	36,073
Heavy (building waste)	1,475
Mixed Waste (small vehicles)	4,713
Mixed Waste (commercial)	8,443
WM Scrap Metal In	17
Street Sweepings	1,757
Timber Waste	52
<b>Total</b>	<b>72,586</b>

**Recovered Material - tonnes**

<b>Material</b>	<b>2011/12</b>
Bricks	325
Cardboard	357
Clean fill	3,075
Concrete rubble	640
E-waste	26
Gas Bottles	3.3
Glass & plastic	25
Green Waste (inc Street sweepings & MWMG green waste)	38,027
Mattresses <sup>1</sup>	64
Non-ferrous metal (inc car batteries)	64
Motor oil	5.6
Paint	4.3
Plastic	16
Polystyrene	4.4
Rubble	465
Shop goods	271
Ferrous metal (steel)	3,006
Timber waste	194
Tyres	28
<b>Total</b>	<b>46,602</b>

Diversion rate = 64%

## 4.2.2 Waste Projections

**Table 12** *Projections for waste and recyclables in the municipality based on current collection service*

	2012/13 (Current) Kg / Hh/ yr	2015/16 (Projected) Kg / Hh/ yr (2.5%)	2020/21 (Projected) Kg / Hh/ yr (8.8%)
Garbage	497.90	499.89	541.72
Recycle	285.47	292.61	310.59
Green Waste- user pays bin	364.96	374.08	397.08
Green waste- bundled	59.57	61.06	64.81
Hard waste	102.00	104.55	110.98
<b>Total</b>			

### **Key Issues**

The projections will be influenced by possible changes to the waste receipt service through advanced waste treatment and the treatment of organics. This could result in the removal of food waste from the garbage bin and inclusion in an 'organics bin' which will include green waste. This is dependent on a facility being available to Knox that can process the organics product.

The organics bin contents would be processed into a composted product for re-use thereby diverting the food waste component from landfilling.

Collection costs are anticipated to be higher, however processing costs will be lower compared to the current situation where food waste is landfilled.

The introduction of such a service is not anticipated over the life of this contract, however would require consultation with the community due to changes in the service.

### **Opportunities for Improvement**

The improvement will be in the acceptance of a tender for the development of a regional organics composting facility that can accept food waste. This regional facility could be available for the outer eastern Melbourne Councils and may be part of an Alternate Resource Recovery Facility.

## 4.3 WASTE DISPOSAL AND RESOURCE RECOVERY FACILITIES

### **4.3.1 Waste management facilities currently operating in or near the municipality**

**Table 13** *Waste disposal and resource recovery facilities within or near the municipality of Knox City Council*

Knox Transfer Station	251 George Street, Wantirna South
Whitehorse Transfer Station	638-648 Burwood Highway, Vermont South
Lysterfield Transfer Station	840 Wellington Road, Lysterfield
Eco waste Transfer Station and Recycling Centre	199-201 Colchester Road, Kilsyth

The Knox Transfer Station is operated under contract to Knox City Council by Knox Transfer Station Pty Ltd.

The contract commenced in February 2007 and is for a fifteen year period with the option of a five year extension at Council's discretion.

Knox Transfer Station Pty Ltd have, through their investment in infrastructure, plant and equipment on the site increased the recovery rate from approximately 15% in 2007/08 to 64% in 2011/12 with a corresponding increase in incoming material from approximately 15,000 tonnes in 2007/08 to 72,586 tonnes in 2011/12.

### **Key Issues**

The Knox community are becoming more aware of the need to recover and re use products that they no longer require. They are in turn requiring facilities where they can conveniently deposit these items, preferably free of charge, so they are not land filled. Transfer Stations are the preferred location for the collection of commingled recyclables, paper and cardboard, e-waste including televisions and computers, polystyrene, toxic chemicals, furniture, electrical goods, building products in order to maximise recycling.

### **Opportunities for Improvement**

Council's transfer station currently provides for the separate collection of commingled recyclables, paper and cardboard, e-waste including televisions and computers, toxic chemicals, furniture, electrical goods and building products however not all can be accepted free of charge. The opportunity exists for the transfer station to be part of permanent facility arrangement with the State Government Detox Your Home program.

The Whitehorse Transfer Station is operated by Whitehorse City Council whilst the other sites are privately operated.

The gate fees for the external facilities are consistent with those of the Knox Transfer Station as they are reviewed annually as part of the process of Council approving the proposed gate fees for Knox Transfer Station.

## **4.3.2 Old or closed waste management facilities within the municipality**

Knox has two former landfill sites: Cathies Lane Landfill and Llewellyn Park Landfill.

### **4.3.2.1 CATHIES LANE LANDFILL**

The Cathies Lane landfill consists of five cells (Cells 1, 2, 3, 4 and Western cell) with filling undertaken between 1986 and 2004. The site also accommodates a landfill gas extraction system, monitoring bores for leachate and groundwater, leachate treatment pond and a transfer station/recovery centre.

Cells 3 and 4 have lined bases with a leachate collection system in place. Cells 1, 2 and the western cell are unlined. Cells 1-4 were rehabilitated between 2002 and 2005 and the western cell was rehabilitated between 2007 and 2010.

The site is licensed by the EPA, under the *Environment Protection Act 1970*. An EPA Waste Discharge Licence (EM28913) was issued to Council on 23 April 1996 and was last amended, and reissued on 30 June 2010 in line with the new EPA landfill licensing program.

Additionally, the site is subject to a Trade Waste Agreement (Trade Waste Number – 1904) with South East Water, which regulates the quantity and quality of waste water (leachate) discharge from Cathies Lane to sewer.

A Pollution Abatement Notice was issued by EPA In December 2012 in response to landfill gas levels from recently installed perimeter monitoring bores exceeding the action levels specified in the EPA Best Practice for Environmental Management 2010 (Landfill BEPM) guidelines. This has resulted in the development of a Landfill Gas Remediation Action Plan which requires a series of actions from Council to manage any potential risks both at the site and in the area surrounding the site.

Council is also undertaking the design and installation of a leachate management system at the site to control the amount of leachate within the landfill.

#### 4.3.2.2 LLEWELLYN PARK LANDFILL

Filling was undertaken between 1975 and 1986. After 1986 the landfill area was capped with a layer of clay to allow the area to be developed as a sporting and recreational complex.

In early 2002 liquid was observed to be seeping to the land surface at the northern end of Llewellyn Park near Coppelia Street. Laboratory analysis of the liquid confirmed that the seepage was consistent with landfill leachate. A Pollution Abatement Notice (PAN) was issued by the EPA in May 2003, under the *Environment Protection Act 1970*.

Since that time a network of monitoring bores for groundwater and leachate have been installed and in 2005 works were undertaken to prevent ponding on the cap and improve surface water drainage at the site.

No leachate or landfill gas extraction has been undertaken at Llewellyn Park Landfill.

A Pollution Abatement Notice was issued by EPA In January 2013 in response to landfill gas levels from recently installed perimeter monitoring bores exceeding the action levels specified in the EPA Best Practice for Environmental Management 2010 (Landfill BEPM) guidelines. This has resulted in the development of a Landfill Gas Remediation Action Plan which requires a series of actions from Council to manage any potential risks both at the site and in the area surrounding the site.

Council is also undertaking the design and installation of a leachate management system at the site to control the amount of leachate within the landfill.

#### **Key Issues**

Both former landfill sites are required to meet EPA requirements with regard to landfill gas and leachate. Regular monitoring and reporting is being undertaken to address these requirements.

#### **Opportunities for Improvement**

Council has engaged environmental engineering consultants to advise on the implementation of leachate and landfill gas management systems for each site.



Funding is also being provided for the installation of these systems, if required. Development of a Master Plan for the Llewellyn Park Landfill site is also proposed in the 2013/14 financial year.

#### 4.4 EDUCATION STRATEGY

The reduction of waste to landfill and increased recovery and re-use of waste items is heavily reliant on Council communicating with our community on how these objectives can be achieved.

Feedback received from the community survey has revealed that Council needs to do more to inform residents about the options available with the waste service.

##### **Key Issues**

Provision of education services has not achieved all of the outcomes specified in the previous Waste Management Plan. Council's receipt of recyclables contractor was contracted to provide this service, however were unable to continue due to resourcing issues. Council's Sustainable Futures Team then undertook this service at short notice. Council has acknowledged that education to address waste disposal issues relating to the following areas is required:

##### Recycling stream:

Recyclable items placed in plastic bags.

Non-recyclable plastics.

Other contaminants, food, garbage, syringes, nappies, polystyrene, hard plastics, pots and pans.

Possible future issues with Multi Unit Developments.

##### Green organics stream:

Contaminants, including plant pots, soil, bricks, rubble, plastics and syringes.

##### Hard waste stream:

Volume of material.

Recyclability of items via other mechanisms – acceptable or not, eg various drop-off services for TVs, computers, scrap metal, furniture, batteries, globes, EPS, paint, oil, chemicals, etc .

Bin placement time, ie too early or late.

Non-acceptable items.

##### Commercial stream:

Non-acceptable items in waste & recycling stream for both bin-based and Dorset Square Waste Compound.

##### Council facilities & user groups:

Decreasing waste generation and increasing participation in recycling.

##### Illegal dumping & littering:

Recent increase in illegal dumping of waste on road reserves and in Council parks.

Littering of small items, particularly cigarette butts.

##### Garbage bin options:

Residents have the choice of an 80 litre or 120 litre garbage bin with the 120 litre bin attracting a garbage surcharge. There is also the option of a user pays green waste bin.

#### Transfer Station services:

A wide range of recyclable products are received free of charge at the transfer station.

#### **Opportunities for Improvement**

A Waste Education and Engagement Plan will be developed by Council's Sustainable Futures team, in collaboration with the Waste Management team, to respond to the key issues highlighted in the community consultation and assist in achieving the targets set in this Waste Management Plan. A critical component of the Waste Education and Engagement Plan will be evaluation to ensure the Plan is achieving its set targets.

#### 4.5 LITTER MANAGEMENT

Local governments are the major players in controlling, cleaning up and trying to prevent litter. The 2006 VLAA survey found that 76% of local governments or RWMGs reported that they had run a litter prevention program, dropping from around 95% in 2005. Litter reduction programs conducted by local government have been shown to be effective in reducing littering behaviour.

Around the world it is agreed the most effective litter prevention behaviour change programs include a mix of approaches across the three critical areas of education, infrastructure and enforcement. The mix of these elements needs to be adapted to the local conditions and include incentives, communications and evaluation. These are the elements that characterise Victoria's approach to litter prevention.

The Victorian litter strategy, *Creating Cleaner, Safer Places*, was issued in August 2009.

#### **Key Issues**

- Litter hotspots - bus stops, pedestrian routes from schools to shops/ bus stops, bike paths, Council Reserves particularly smaller reserves where there are no bins present and take your rubbish home applies, lack of litter clean up in shopping centres.
- Unable to force the public to utilise bins even if they are present, ie deliberate littering linked to anti-social behaviour.
- Cigarette butts – create a major litter issue in shopping centres. Council has seen the installation and maintenance of butt bins as the responsibility of the traders at the shopping centres. This has created issues in terms of maintenance of the butt bins.

#### **Opportunities for Improvement**

An assessment of the need for further or amended litter prevention and communication programs is required.

In some cases, the triple bottom line (financial, economic and social) implications of identified opportunities will need to be considered. Based on this preliminary analysis, a separate Litter Reduction Strategy may need to be developed for the municipality.

## 4.6 COUNCIL INTERNAL WASTE MANAGEMENT

### 4.6.1 Waste composition and quantities

In June 2012 Council conducted a waste audit of materials presented to the garbage, commingled recycling and paper waste streams at three Knox City Council offices being the Civic Centre, Operations Centre and Eastgate Building.

The waste audit was designed to provide Council with the following information:

- Composition of the three waste streams by mass and volume;
- Rate of resource loss in the garbage stream;
- Rate of contamination in the commingled recycling and paper streams.

The audit revealed the following:

- The total waste stream consisted by weight of 59.1% recyclable paper, 19.7% residual waste items, 13.7% food and garden waste and 7.5% recyclable containers
- The rate of resource loss in the garbage stream (recyclable items placed in the garbage bin) was 19.1% by weight.
- The rate of contamination in the recycle stream was 27.7% by weight
- The rate of contamination in the paper stream was 0.3% by weight.

### 4.6.2 Council waste reduction policies and activities

Policies and initiatives implemented by Council to improve waste minimisation have included:

- Eco-buy commitments or other purchasing policies
- Waste Reduction Action Plans (WRAPs)
- Green office initiatives
- Council purchasing policy- Eco Buy
- Office Paper Recycling and commingled recycling
- Paper and Cardboard recycling via skip bin
- Litter bin stations – not at workstations
- Paper containers at workstations
- Battery, mobile phone and printer cartridge recycling
- Double sided printing
- Office clean up days
- Operations Centre product recycling
- Oil recycling at workshop

### ***Key Issues***

- Composting of food waste - implementing this including taking ownership for managing this.
- Use of composted green waste by Council's Parks Department for placement on Council garden areas.
- Collection and processing of food waste at festivals – currently only done at Stringybark Festival.
- Levels of resource loss in the waste stream and contamination in the commingled recycle stream are above acceptable levels.
- Non recyclable plastic cups, tea or coffee paper cups and wooden stirrers provided for Council meetings.

### ***Opportunities for Improvement***

Strategies to address the Key Issues will be incorporated into the Waste Education, Communication and Engagement Plan to be developed by Council's Sustainable Futures team in collaboration with their Waste Management team.

# 5 PROGRESS TO DATE AND ACHIEVEMENTS

## 5.1 PRIOR ACTION PLAN REVIEW

The following were recommendations from the Knox Council's Waste Management Plan 2006-2013. Note that achievements are denoted in bold italics.

### KERBSIDE COLLECTION SERVICES

#### Garbage

Maintain the weekly 80 L and 120 L bin mix as the garbage service.

Increase the price differential between the 80 L and 120 L bins.

***Both bin sizes continue to be available. Price differential increased through a garbage surcharge applied to the 120 L bin.***

Commit to move from land filling to residual advanced waste treatment when a regional facility is established.

#### Recycling

Remove recycling bin dividers, collect recyclables fully commingled and expand the range of rigid plastics to be recycled (included as a part of the new waste collection contract commencing in October 2006).

***Recycle bin dividers removed between November 2006 and March 2007. Contact No. 1636 commenced in October 2006 and provided for collection and recycling of codes 1-7 plastics.***

Extend the range of materials to include clothing, small appliances and other non-toxic consumer recyclables (subject to the ability of sorting facilities to handle them and also to the availability of sustainable market outlets).

Provide information to residents on destination of recyclables and environmental benefits of recycling.

***Information included in annual waste guide delivered to all Knox households.***

#### Multi unit Sites

Where appropriate, introduce larger skips for garbage and recyclables at multi-unit sites.

***Council has developed a policy and procedure for Waste Management in Multi Unit Development Sites in 2012. Provides for use of larger skips for garbage and recyclables.***

#### Green Organics

In response to changes to manual handling guidelines, cease bundled green waste collection with the current user pays bin service to be maintained.

***Bundled green waste and user pays bin service are still available.***

#### Hard Waste

In response to changes to manual handling guidelines, cease kerbside hard waste collection and introduce a user-pays at-call hard waste service.

***Hard waste collection service has continued with separate collections of metals, mattresses and re usable goods such as furniture.***

### **Proposed kerbside Collection Services Charging**

Show a separate uniform waste charge on the annual rates notice. (Proposed as part of the 2006/2007 draft budget).

***Proposed by Council in draft budget for 2006/07 but not adopted.***

### **RECYCLING SERVICES FOR COUNCIL AND COMMUNITY VENUES**

Provide community organisations with commingled recycling collections – no user charge. Require site audits and reporting.

***Council introduced a commingled wheelie bin recycle service for user groups at Community Venues in 2007. Includes Community Centres, sporting grounds. Have 130 bins in service as at 30 June 2012.***

***Council has changed the policy for recycle bins for retirement villages and non rateable properties so a recycle bin collected fortnightly is provided with a waste bin.***

Continue to provide a bulk bin style garbage collection service to community organisations that use Council sporting and recreational facilities collection – with this service to be provided on a user pays basis.

***Bulk bins still provided at no cost to the community organisations.***

Continue the provision of public place recycling and garbage services to retail areas and the application of a carry in/carry out policy to recreational facilities where food and beverages are not sold.

***Council has upgraded the public place litter and recycle bins and the material collected from the recycle bins is now being recycled at a Materials Recovery Facility. Contamination rate from audits of the recycle bins is less than 10 % by weight.***

### **SERVICING OF COMMERCIAL VENUES**

Provide a standard recycling service to small to medium enterprises (SME's) as part of the current user pays charge.

***Council introduced a new commercial waste service in 2007 which included provision of a 240 litre recycle bin collected weekly at no additional cost.***

### **WASTE MANAGEMENT INFRASTRUCTURE IMPROVEMENTS**

Provide a broad range of recycling opportunities all at a reduced disposal cost at the Cathie's Lane transfer station and increase the promotion of the transfer station facility and its recycling opportunities.

***New fifteen year contract let for management and operation of the transfer station effective from February 2007. Product recovery rate has increased from 10% in 2007 to 60% in 2012 with approximately 70,000 tonne of material being received in 2011/12.***

Encourage the collection of low toxic/high volume household chemicals at the Cathie's Lane transfer station.

***This is being proposed as part of the Detox Your Home Program run through Sustainability Victoria.***

## Landfill

Pursue the development of a regional Alternate Waste Treatment facility – at the site of an existing landfill.

Continue support for the Regional Green Organics Processing Facility.

**Both being pursued in association with the Metropolitan Waste Management Group.**

## OTHER SERVICES

Undertake regular audits of all public and Council waste streams.

**An annual audit is undertaken of the waste and recycle bins of 100 randomly chosen properties and audits of the contents of two randomly chosen recycle collection vehicles.**

Develop key performance indicators (KPI's) for Council in relation to community waste levels, recycling and waste diversion.

**Council is participating in the Local Government Victoria performance survey pilot program.**

Provide comprehensive information on how to recycle almost everything.

**Council's waste calendar, which is distributed to all households annually, has an 'A-Z guide to Waste and Recycling' which lists a range of products along with websites for residents to refer to.**

Support local establishment of recovery/reprocessing facilities.

**Council has supported the Knox Transfer Station which is a Council owned facility operated under contract to an external company.**

Establish a program with retailers to reduce the use of plastic retail carry bags.

**This has not been pursued.**

Continue to support the disposable nappy recycling program.

**This program is no longer operating.**

Conduct full independent risk assessment of all collection services including reversing of vehicles and manual handling issues.

**This has been done on an industry wide basis to satisfy WorkSafe requirements.**

Extend green purchasing activity across all council activities through the Eco buy program.

**Council has adopted the Eco Buy program in its Purchasing Policy.**

## TOWARDS ZERO WASTE (TZW) TARGETS

For the twelve months to 30 June 2013 the % of waste diverted from landfill was 50.1%.

Putrescibles waste -28,661 tonnes.

Recyclables- 16,433 tonnes.

Green waste- 18,135 tonnes.

Hard Waste- 5,715 tonnes.

Recyclables from hard waste - 164 tonnes.

Public Place Litter Bins - 222 tonnes.

Public Place Recycle Bins - 46.

The TZW target was 65% as at 30 June 2014 which equates to 57 % as at 30 June 2012.

# 6 FUTURE DIRECTIONS

## 6.1 OBJECTIVES AND PRIORITIES

Discuss long term objectives of waste management, e.g. meeting or exceeding TZW targets.

## 6.2 KEY PERFORMANCE INDICATORS

The following key performance indicators have been developed and are to be used to enable easy assessment of Knox City Council's current waste management performance. They also enable comparison with other councils in the metropolitan region.

**Table 14 Key Performance Indicators – 2014-2021**

KPIs	Tonnes (2012/13)	Number of Households	tonnes/ Hh / year
Tonnes to landfill	28,660	58,422	0.497
Tonnes of Commingled recycling	16,433	58,422	0.285
Tonnes of green organics processing	18,135	56,250	0.322
Other- hard waste	5,715	56,250	0.102
Total waste generation			
			<b>Rate (%)</b>
Diversion rate – recycling			22.7
Diversion rate – organics			29.7
Diversion rate – total (recycling plus organics)			52.4
Diversion rate – hard waste			5.4
Commingled recycling contamination rate			8.0%
Organics contamination rate			Not known



### 6.3 ACTION PLAN

The following Action Plan has been developed to achieve identified long term objectives, detailed above, and address identified issues and opportunities for improvement detailed throughout the WMP:

**Table 15 Action Plan**

FUTURE DIRECTIONS		ACTIONS	RESPONSIBILITY	COMPLETION DATE
Reduction strategies	<ul style="list-style-type: none"> <li>Reduce household and council waste generation rate</li> </ul>	<ul style="list-style-type: none"> <li>Targeted Community Education Programs.</li> <li>Support Metro Wide home composting and worm farms education programs.</li> <li>Sustainable shopping/consumption programs to reduce food wastage.</li> <li>Continue home composting, worm farms.</li> <li>Publicise product recovery sites for e-waste, clothing, batteries, polystyrene.</li> <li>Waste bins to continue to be available in 80 litre and 120 litre sizes with surcharge applied to the 120 litre bin.</li> </ul>	Waste Management	On going
Green Organics processing	<ul style="list-style-type: none"> <li>Support upgrade of organics processing infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>New contracts for organics processing facilities must focus on odour and product quality requirements being met.</li> <li>Engage in procurement process for organics processing with MWMG to provide a long term contract.</li> </ul>	Waste Management	30 June 2015

FUTURE DIRECTIONS		ACTIONS	RESPONSIBILITY	COMPLETION DATE
Improved kerbside collection	<ul style="list-style-type: none"> <li>Develop and support specialised collection services for used and unwanted household products.</li> <li>Continue to expand education and behavioural change programs in support of proper source separation of household waste and recyclables.</li> <li>Further pilot projects and trials of collections from multi-unit dwellings.</li> </ul>	<ul style="list-style-type: none"> <li>Investigation of programs such as day after recycling where the recycling bin is used for a separate collection of non-traditional recyclables such as small appliances, books, clothing, etc.</li> <li>Support standardised metro wide recycling sorting criteria with education program.</li> <li>Participate in forums and support programs for improving resource recovery from multi unit dwellings.</li> <li>Participate in MWMG Get it Right on Bin Night program.</li> <li>Implement collection service for Multi Unit Developments based on Council's policy and procedure using smaller collection vehicles, larger sized communal bins.</li> <li>Ensure waste collection contracts provide the flexibility to include for food waste into the green waste bin subject to the availability of a processing facility to receive the organics product. Would require weekly collection of the organics bin and fortnightly collection of the waste bin.</li> <li>Inclusion of other items in commingled recycling stream, ie hard plastics such as food storage containers and toys and metal items such as pots, pans &amp; oven trays.</li> <li>Change hard waste collection service from twice yearly scheduled collection to twice yearly at call collection.</li> <li>Change bundled and resident's own container green waste service from fortnightly to monthly.</li> </ul>	Waste Management	On going
Other Council Collections	<ul style="list-style-type: none"> <li>Hard waste collection systems to maximise resource recovery and provide safe collections systems.</li> <li>Away from home recycling - Improved collection of recyclables at events and public places and for user groups at Council venues.</li> </ul>	<ul style="list-style-type: none"> <li>Collect performance data on resource recovery rates.</li> <li>Monitor hard waste collection system to ensure compliance with WorkSafe guidelines.</li> <li>Work with MWMG on away from home recycling programs.</li> <li>Provide separate collection services for products such as e-waste, mattresses, lounge suites where items can be stripped to recover components.</li> <li>Consider implementation of paper and cardboard collection service for Council venues to supplement the wheely bin commingled collection service.</li> </ul>	Waste Management	On going
Transfer Stations	<ul style="list-style-type: none"> <li>Residents to have adequate access to transfer stations with range of opportunities for reuse and resource recovery.</li> </ul>	<ul style="list-style-type: none"> <li>Expand range of products that can be received at the transfer station where there is recovery potential- electrical goods, white goods, polystyrene, e- waste, tools, furniture, clothing.</li> </ul>	Waste Management	30 June 2014

FUTURE DIRECTIONS		ACTIONS	RESPONSIBILITY	COMPLETION DATE
Community engagement and education	<ul style="list-style-type: none"> <li>The changes to the waste service require an effective communications and engagement strategy if maximum benefits are to be obtained.</li> </ul>	<ul style="list-style-type: none"> <li>Ensure changes to the hard waste and bundled green waste service include effective communications programs that explain benefits and requirements of the new system.</li> <li>Required also if food waste is included in the green waste bin.</li> <li>Develop a waste education, communication and engagement plan to better communicate with residents on minimising material being placed in the waste bin.</li> </ul>	Waste Management	30 June 2014
Market development	<ul style="list-style-type: none"> <li>Improved education and organics processing facilities to reduce contamination.</li> </ul>	<ul style="list-style-type: none"> <li>Bin and collection vehicle audit programs in conjunction with targeted education to reduce contamination of organics.</li> <li>Promote the organics products from composting facilities through Council's web site, waste guide.</li> </ul>	Waste Management	On going
Procurement of waste services	Procurement guidelines will be based on an MWMG led model. Clusters of councils and/or the MWMG may enter into contracts for the provision of appropriate infrastructure and services.	<ul style="list-style-type: none"> <li>Use of MWMG model to enter into a contract for composting of kerbside collected organics.</li> <li>Use of MWMG to develop options for advanced waste treatment.</li> </ul>	Waste Management	30 June 2021
	<ul style="list-style-type: none"> <li>Prioritise processes for recovery including waste, household chemicals.</li> </ul>	<ul style="list-style-type: none"> <li>Development of e- waste receipt facility at the transfer station and possible collection from hard waste service.</li> <li>Advocate for permanent Detox Your Home service at the transfer station.</li> </ul>	Waste Management	30 June 2014
Resources recovery and planning assessment matrix	<ul style="list-style-type: none"> <li>While the state government is currently reviewing the Victorian Planning Scheme, an assessment tool will need to be developed to assist in the assessment of potential sites in accordance with the revised planning provisions.</li> </ul>	<ul style="list-style-type: none"> <li>Participate as appropriate to ensure suitable resource recovery sites are recognised and protected.</li> <li>Participate in forums, provide submissions to revised planning provisions and State and Federal Waste Policy revisions.</li> </ul>	Waste Management	On going

**Note: Action Plan will be reviewed on an annual basis.**

# 7 FINANCIAL CONSIDERATIONS

The following table documents the proposed financial implications of the waste services proposed over the period 2014-2021. These figures are obtained from Council's Long Term Financial Strategy.

**Table 16 Financial Projections**

<b>Waste Program</b>	<b>2013/2014</b>	<b>2020/2021</b>
Waste Management Administration	\$341,489	\$449,005
Domestic Waste	\$2,926,640	\$3,316,896
Commercial Waste	(\$116,022)	(\$198,264)
Hard Waste	\$1,026,823	\$1,228,918
Recycling	\$1,234,332	\$1,438,328
Green Waste	\$538,791	\$297,152
Llewellyn Park Leachate Investigation	\$66,842	\$79,998
State Government Landfill Levy	(\$59,281)	\$3,802
Landfill Tip Costs	\$228,610	\$296,907
Roadside Litter Collection	\$407,260	\$487,471
<b>Total</b>	<b>\$6,595,484</b>	<b>\$7,400,213</b>

The financial projections allow for the service provision as outlined in the Action Plan of the WMP with the exception of the following:

- Changing the hard waste service from two scheduled to two at call collections per annum. This is anticipated to provide a saving of \$200,000 per annum from 2014/15 onward.
- Changing the bundled and resident container green waste service from fortnightly to monthly. This is anticipated to provide a saving of \$200,000 per annum from 2014/15 onward.
- Processing Council's Kerbside Collected green waste through the new organics processing facility. This is anticipated to increase the annual expenditure for green waste by approximately \$700,000 per annum from 2015/16 onward.
- Inclusion of food waste into the green waste bin which would require weekly collection and garbage bin would change to fortnightly collection. This is estimated to increase the annual expenditure for green waste by approximately \$ 800,000 per annum. There is no timeframe for this. If introduced would most likely be around 2019/2020.
- Disposal of Council's kerbside collected waste through an Advanced Waste Treatment facility. This is estimated to increase the annual expenditure for domestic waste by \$360,000 per annum. There is no timeframe for this. If introduced would most likely be beyond 2020/2021.

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# 8 REFERENCES

## Section 1.2.1

Full weblink to population data as provided by DSE from Victoria in Future 2008 report is:  
<http://www.dse.vic.gov.au/DSE/dsenres.nsf/LinkView/B9023E3BAACA5A6ACA256EF60019E55806C7DF80826B65674A256DEA002C0DCA>

# APPENDIX A

## Summary of Feedback from Stakeholder Engagement

### OVERVIEW

The comments provided below have been collated from the sessions run with each of four stakeholder groups during February and March 2013, based on the Consultation Framework approved prior to commencement.

**External Stakeholders** include Councils waste management collection contractors (Remondis and TPI Cleanaway), Knox Transfer Station Managers WM Waste Management, State Government Agencies (MWMG and Sustainability Victoria) and waste auditing consultants (All Environmental Concepts).

**Internal Stakeholders** include Council staff from Waste Management, Customer Service, Operations (depot), Health and Sustainability.

**Residents** consisted of a group of Knox staff who were not participants in the Internal Stakeholders sessions, but who live in the Knox City Council area.

**Council's Environmental Advisory Committee** a committee of Council with representation from local residents, relevant Council staff and a Councillor.

Before seeking comment on each area of the consultation framework, context was provided to ensure that participants were able to provide informed comment. This context had the added (and in some ways unexpected) benefit of raising awareness of the issues facing Knox in terms of strategic waste management. In turn, the participants commented that they felt much more knowledgeable about why certain decisions needed to be made. They have stated that they are willing to participate in further sessions later in the process, for example to provide comment on the draft waste management strategy.

## **RECYCLING COLLECTION**

### **Potential future options canvassed**

1. Continue to implement option of choice of different sized bins or collection frequencies for MUDs, and consider different sized bins for users of Council venues subject to considering impact of changes in material markets and costs.
2. Explore inclusion of plastic film in receipt of recyclables, particularly for commercial recycling
3. Explore the potential in the next collection and sorting contract for including non-traditional recyclable materials such as small domestic items including appliances, phones and small E-waste items, plastic toys, plastic containers, cooking utensils
4. Change over recycling bin lids to AS yellow when practicable if recycle bins are replaced or retain the bin and change over lid only if recycle bins are not scheduled for replacement
5. Implement use of smaller vehicles and/or alternative collection methods for MUD'S , difficult access locations

## **FEEDBACK**

### **COUNCIL VENUES – CHOICES OF DIFFERENT SIZED BINS/OTHER MATERIALS**

- Internal stakeholders
  - Container Deposit Legislation (CDL) was raised. View that Clubs can use recycling of cans as a revenue raiser if this was available.
  - Needs to be well managed by both Council and the club.
  - Current service provided is a weekly pick up similar to a resident collection – currently there isn't much provision for clubs to recycle cardboard. Internal stakeholder group agreed this would be a good potential future option to explore.
  - There was discussion around the need to have secure collection facilities – e.g. a key needs to be provided. ensure it can't become a fire risk and be contained so it doesn't cause litter.

## COMMERCIAL SERVICES

- Internal stakeholders
  - Service is currently promoted as a package – businesses can only have recycling service if they order a waste service. It is cost recovery only, which means it is less expensive than a commercial service provided by a waste company.
  - Preference is that Council doesn't get involved in providing skips. But, question was raised whether Council should explore providing more opportunities for commercial businesses to recycle (i.e. cost recovery based service) because it provides an environmental benefit to the whole community – e.g. the benefits extend to householders.
  - Suggestion from internal stakeholders that bigger size skips be provided for Commercial users and/or users of Council venues and that an option for increased frequency of collection (e.g. daily) be available to encourage commercial businesses to recycle.
  - Explore options for polystyrene recycling service for commercial operators.
  - Flexible plastics (e.g. wrap) is currently coming through the recycling stream in the commercial service and is a contaminant. Would be good to explore whether receivers can accept as a product and if so what service could be provided.
  - Comment that it's not Council's role to provide C&I waste services and that businesses should be encouraged to seek their own service provider, particularly the larger ones.

## NON-TRADITIONAL RECYCLABLES

- Canvassed ideas including one similar to the 'Renew' collection undertaken by other Councils (Moonee Valley/Whitehorse) whereby such goods are collected in the Recycling bin on the non-recycling week once or twice per year. Feedback from all groups was that this is a good idea to explore. From resident groups – need to consider what happens with your usual recyclables when the bin is being used for this collection.
- From customer service: "we get calls about a frypan we could have said "put it in your recycle bin" but we had to say go to the tip or in the rubbish. If all that could go in the recycling at the same time that would be fabulous! Get smaller litter that gets scattered all over the place, bits & pieces could be taken out of the 2 collections. We could say put the toaster in your recycle bin. That would be great! Small appliances should be recyclable."



## **AUSTRALIAN STANDARD BINS**

- Residents
  - Feedback from residents who have moved into the area is that the bin system is confusing, but okay once you understand which is which.
  - If Council moves to providing food organics collection this would be the time to change the colours of bins.
  - There would need to be a significant education campaign around any change.

## **RECYCLING MATERIALS AND SPACE**

- External stakeholders
  - Bin configuration may need to change for recycling. 360 litre bins for prolific recyclers should be offered.
  - Difficult to retrieve plastic bags – may need different approach.
  - Recycling markets overseas have been established by operators such as Visy, SKM and Polytrade and they now have very strong relationships with overseas markets.
  - Shame that large amounts of low value glass fines appear to be result of new technology at MRF.
- Residents
  - Some people wait until the following week if they run out of space (pile things up in the pantry), while others use the garbage bin instead. Option for larger size bins would be useful, or an option to have another recycling collection if needed for festive times, etc.
  - Fortnightly garbage/weekly recycling service would be welcomed.

## **KNOWLEDGE ABOUT RECYCLING**

- Residents
  - Confused about what materials can go into bins – for example pizza boxes and frozen dinner plastic bowls etc. In or out?

## **GREEN WASTE COLLECTION**

### **Potential future options canvassed**

Quantities of green organics collected from bins exceeding processing facilities' capacity.

Facilities across Melbourne are at risk of failing to achieve sustainable markets for organic material. The material collected is mainly wet lawn clippings that are problematic to process. Town Planning and EPA requirements for new facilities limits the establishment of processing facilities. This will potentially impact on Knox's ability to sustainably dispose of garden organic material collected at kerbside in the future.

Aiming to reduce the amount of garden organics collected with reuse/recycling on site the following options could be considered:

1. Provide an option of a 120 litre bin collected fortnightly with price differential from the 240 litre bin.
2. Investigate options for incorporating food waste into an organics bins. Introduce new organics waste bins (weekly) when viable Regional Facilities for food organics and residual waste are established.
3. Change over green waste bin lids to AS green when practical if green waste bins are replaced or retain the bin and change over lid only if green waste bins are not scheduled for replacement.
4. Reduce the frequency of bundled green waste collections (for example to at-call, six monthly or quarterly).

### **Feedback**

#### **GREEN WASTE SERVICE SIZE AND FREQUENCY**

- External stakeholders
  - Residents should be able to choose smaller green waste bins as 240 litre green waste bin may be too large for some residents.
  - Although no specific improvements in existing Knox services are identified, strategically, improvements should concentrate on the area of organics.
  - Bin types, sizes and frequency of collection will need to be changed for food organics processing.
- Internal stakeholders
  - Feedback was that providing option for a smaller (120l) bin is a great option.

- Shared green waste services for multiple unit sites or low maintenance gardens could be an option – however bin sharing can get tricky with how it's charged on rates – e.g. charge goes on rates rather than billed to body corporate. This means one ratepayer must pay the charge and then recoup from others.
- Recognised as important to find a solution to reducing the frequency of service because of the volumes collected. It is important to make sure markets are available for the volume of green waste collected. At the moment some of Knox Green Waste material is going to East Gippsland.
- Tenants are less likely to have a green waste bin because the landlord/ratepayer won't pay extra. Tenants expected to use the bundled/box collection because it is seen as a 'free' service.
- In total 12% of residents use the bundled service and will be loath to pay for a bin based service.

#### **BUNDLED GARDEN WASTE COLLECTIONS**

- External stakeholders
  - Households should be able to access bin based collections for green waste which is not manual handled – branches could be cut into short lengths and placed in a bin.
  - Loose and bundled fortnightly green waste collections are not the norm at other councils and considered over service – could be reduced to inclusion with 2 per year hard waste collections.
  - Replace current loose green waste collections from fortnightly to a twice per year bundles collection.
- Residents
  - “Why should council pay for garden waste bundle and boxes service? People are paying for this now with Jims mowing etc.”

#### **FOOD ORGANICS**

- External stakeholders
  - Changing over to collect food organics with garden waste is not a big problem if 3 bin system at same frequency is to be introduced.
  - In-vessel organics processing is needed for household organic waste including food and green waste (e.g. Port Macquarie).

- Knox Transfer Station is not permitted under EPA requirements to take food waste as part of the green waste drop off.
- Organics need to be taken out of landfill by using cost drivers e.g. gate fees, govt. policy, carbon tax.
- New organics processing facility for SE Metro Region (not for Knox) about to be confirmed (tender process nearly complete). Indicators are that industry will respond favourably for Eastern Metro (incl. Knox) organics processing facility to be the next one developed.
- Residents
  - Comments included that it is a good idea to put food with green waste, but also that Council should encourage home composting (various models). For example, offer residents that if they put in a composting system at home they can get a reduction in their rates. This would encourage composting.
  - There was a question about what happens with meat in bin based systems.
  - One resident talked about the use of an 'insinkerator' type product – Could Council look at some type of extension of this concept using pipes to take food waste away?
  - Provide initial and ongoing funding from savings in processing costs for reduction in green organics collected for intensive marketing and promotions campaigns aimed at encouraging home composting and/or on-site treatment of organic material.

## **RESIDUAL WASTE**

### **Potential future options canvassed**

*Regional facilities to treat organic and/or residual waste are not established, nor accessible, for Knox. It is unlikely that they will be established and operating at the scale required until beyond 2021.*

1. Maintain current price differential in terms of pricing mechanism.
2. Maintain the weekly 80 L and 120 L bin mix as the garbage service for residential properties with flexibility in the next waste contract 2014 – 2021 to consider options when/if regional facilities become available.
3. Review frequency of collection and if appropriate introduce new residual waste bins collected fortnightly with organics waste bins collected weekly if Regional Facilities for food organics and residual waste are established.
4. Change over residual waste bin lids to AS red when practical if residual waste bins are replaced or retain the bin and change over lid only if residual waste bins are not scheduled for replacement.
5. Implement use of smaller vehicles and/or alternative collection methods for MUD'S , difficult access locations.

### **Feedback**

#### **BIN SIZE**

- External stakeholders
  - Agree that Council should introduce flexibility in bin sizes.
  - Reducing the standard size of garbage bin and encouraging greater take up of the smaller bin could be introduced using price levers and will result in a reduction of waste to landfill.
- Internal stakeholders
  - Concern about cost of replacement and supplying new bins if a promotion was undertaken, however this is not a reason not to do it. Suggest that Council investigate the savings. Feeling that 80 litre should be standard sized bin. Note several councils are moving or have moved this way.

- Question was raised – how do you know what bin you have? It is listed on the rates notice, and truck drivers apparently know who has what. Often ratepayers will ‘dob in neighbours’ with more than one bin. Suggestion that there should be some review about who has what bins.
- Residents
  - Commented that many people have both an 80&120 litre bin. Two people in the focus group do, and others have observed neighbours putting both bins out.
  - Believe that Council should undertake a concerted promotion to advise residents that they can downsize and save (as several weren’t aware a smaller sized bin was available).
  - Several commented that their bins are pretty much empty, but haven’t changed over because hadn’t thought about it, or wasn’t convenient. Wonder how many others are in the same situation? e.g. kids have moved out, grown out of nappies etc. and no longer need a 120 litre garbage bin.
  - Price would bother some – it is an incentive to move to a smaller bin (e.g. no extra charge for an 80 litre bin) but they didn’t know they could.
  - Worth benchmarking what other councils have achieved (in terms of % split between the 80/120 litre bins) when they have offered a service option (e.g. Kingston).

## **REGIONAL FACILITIES FOR FOOD ORGANICS & ARRT**

- External stakeholders
  - In next 5 years there will be no solid inert landfill sites in the Clayton area where Knox currently disposes of its hard waste (Cleanaway site).
- Internal stakeholders
  - Discussion around landfill and the technical elements gave rise to questions around methane emissions from Hampton Park (one internal stakeholder is a resident of Hampton park) as well as the land footprint and the fact that this landfill was once small but now takes waste from much of Municipal Melbourne and concerns around what this means for the residents of the area.

- Residents
  - This topic gave rise to some discussion around other options for managing waste, including questions around burning rubbish for energy.
  - Other discussions included making sure that any move to ARRT is done slowly to minimise risk, ensure markets are in place and the community is educated during the process of change over.
  - There was no concern over reducing the frequency of a residual waste collection, until comment was raised (by faillitators) about Nappies/Sanitary/Continance products. View is that as long as these are bagged correctly the smell wouldn't cause too many problems.
  - It was felt that Council should show leadership and an element of 'force'. Residents suggested that pilots could be undertaken to show people that it could be done. They believe these should start as soon as the technology is available.
  - The resident focus group were very positive about the community's willingness and ability to take such changes on board, so long as reasons are provided ('don't dumb it down') and instructions are provided on what to do.
  - So long as food is still collected weekly it would be fine to change the frequency of 'residual' waste.
  - Financially, it is okay for rates to increase as long as the material is being reused (e.g. promote the environmental benefits).

## **HARD WASTE**

### **Potential future options canvassed**

*Several Councils in Melbourne have changed their hard waste collections from blanket scheduled collections to At-Call resident booked collections.*

*At-call services encourage use of alternative options such as re-use, drop off at recycling facilities (transfer station) or charitable uses.*

*It also minimises untidy streets, reduces the incidence of scavenging by preventing early placement of material, minimises potential risks inherent in manual handling and reduces the number of collections that need to be made.*

The following options be considered:

1. Retain current frequency and timing collections but reduce the time for hard waste collections across the municipality. (Currently have 2 x 13 week collections- reduce to say 2 x 9 weeks).
2. Limit the quantity of waste able to be placed out for collection by households to two cubic metres.
3. Change to two at-call collections per year for all households.
4. Change both hard waste and green waste to two At-Call collections per year for all households.
5. Include e-waste, polystyrene in items to be collected separately with hard waste collection.
6. Implement use of smaller vehicles and/or alternative collection methods for MUDs , difficult access locations.

### **ISSUES WITH CURRENT SERVICE**

- External stakeholders
  - Strong recommendation that limits should be placed on quantity of hard waste and bundles of green waste to be placed out.
  - There is currently no money made by the hard waste contractor – went in without realizing the quantities involved.
  - Unlimited hard waste collections is a “never ending open cost line” sometimes trucks are full after just collecting one court bowl.



- Issues for collection are identified as including hazardous materials left out for collection, and that batteries and other hazardous waste generated by households not catered for in current service provision for Knox households.
- Processing facilities should be available for hard waste to pull out more recyclable materials (big ticket items).
- Internal stakeholders
  - Dumping/placing waste out early and scavenging are seen as issues – however the process is not there to follow through on enforcement (e.g. can take up to seven weeks for a letter to be sent after investigations etc.- then the burden of proof is on the Council). Communications currently clearly say you will be fined if you put it out, but this doesn't happen. Education campaigns needed to show what happens if people do not adhere to laws.
  - Customer service requests to remove dumped rubbish double before and after the hard waste collection. 10 per day becomes 20 per day during these times.
  - Dumping increase has coincided with landfill levy rises.
  - Dumped rubbish will be picked up within 48 hours and should be followed up by local laws. Suggestion that local laws are not resourced enough to follow up on scavenging and dumped rubbish—much of their time taken up with stray dogs & parking fines leaving no time to chase up people putting rubbish out early. “Letters, inspections, follow up, local laws are under resourced. We run out of options.” Waste team/operations say there needs to be sufficient detail-contractors takes photos local laws can't always get out there.
  - “Concrete, tyres are dumped but the person who dumps it say somebody else dumped it”.
  - It is illegal to take it from kerb (scavenging), but since the introduction of At-Call hard waste in neighbouring councils there has been a rise in organised scavenging in Knox –They look like contractors-high vis vests and with hire trucks, moving around taking all of the valuable materials (e.g. metals) from the piles and leaving only the rubbish that needs to be disposed of at landfill.

- Scavengers don't discriminate, organised people who get hired trucks to make a profit that causes issues in waste management and cause litter problems. increase in hard waste - cost of disposing waste by residents has increased so hard waste twice a year is very convenient way to dispose. "Lots of calls about scavenging! People ring to complain about it. They leave a heap of mess."
- Positive side of scavenging is that it means goods are being reused or recycled rather than going to waste. "A good chair will be thrown at the back of a truck with all other rubbish. That's why I don't mind someone picking it out of the pile so it can be reused. Things I hear all the time we are a disposable society so toaster is scratched we throw it out."
- Need to direct E-waste out of hard waste.
- Half of the hard rubbish on the side of the road could be in a renew type collection.
- Internal stakeholders asked whether there is a possibility of e waste being collected separately as part of the hard waste. Problem with this is if it's in weather it can't be processed. E-waste/old electrical appliances can they be used as chemical collection days.
- "E-waste Collections" run by Federal Government. Council had a free collection for E waste, and drop off is available. However, residents want convenience of putting it out on the kerbside.
- Suggested a separate E-waste collection as part of hard waste using a flatbed truck.
- Cost impact not accepted so have to pay processing at \$1.20/kilo.
- Residents
  - Concern over the amount of waste out early – "Our collection is not due till April and stuff is out there since Christmas".
  - "People don't understand the fines involved. Council should promote the convictions".
  - "People who rent, leave all their stuff when they move".
  - Council could offer a rebate on skip hire to encourage people to dispose of their own waste.

## **Feedback about At-Call collections**

- External Stakeholders
  - All councils want their scheduled collections at the same time – At-Call overcomes this as it can be programmed.
  - At-Call collection services for hard waste is the best means of maximising recycling.
  - At-Call collection should include one customer service (call centre) managing receipt of calls for a service and mailing out confirmation and sticker to keep everything in one administration area.
  - Council should call tenders for receipt of hard waste.
  - Hard waste collections can be improved e.g. At-Call collections seem to be a good standard 2 per year with limit on quantity 2 – 4 metres collected from front yards.
  - Hard waste should be sorted and only residual material sent to landfill e.g. Knox TS is a Hard Waste MRF (Materials Recovery Facility).
  - Hard waste tenders should consider disposal options that recover materials for markets rather than uncontrollably going direct to cheap landfills or potentially risky sites.
  - Options could include Hard Waste MRF.
  - New hard waste service should include collection of E-waste for recycling.
- Internal stakeholders
  - Residents of Knox think they have an At-Call service because neighbouring Councils do. Problem because twice yearly collection isn't starting till March but residents think they can just call and get a service whenever they want it.
  - One stakeholder is a resident of a neighbouring Council with At-Call collection. Now there are areas with rubbish in the streets all the time. They don't have booked stickers yet it's all piled up high & high. It's terrible in every street, I rather it was twice a year.
  - There is a concern internally from Council that any change will lead to resident backlash.

- Residents
  - People who live in areas with At-Call Collections say At-Call service is good. Put it in front of your yard instead of kerbside – is this an option for Knox?
  - A suggestion was to offer 2 free At-Call services per year and then you pay for more if you want them.
  - “It does work if you use it correctly.”
  - Correct use of the service “Comes back to education”.
  - “Maroondah stats say it worked well, if you didn’t have a sticker you get fined”.
  - “Waste on side of road needs to say "booked" so you know it’s not dumped”.
  - Garden waste bins fill up quickly, so more space needed some times of the year- should switch the bundle/box green waste service to At-Call as part of the hard waste service? Or make it monthly-bundles.
  - One resident stated “I’m happy with the way it is”.

## **EDUCATION AND ENGAGEMENT ACTIVITIES**

### **Potential future options**

The years since the development of the 2006-2014 plan have seen increased recognition at a State and Local level of the role that education and community engagement can play in supporting Council to achieve its strategic waste objectives.

1. Develop and implement a waste education, communication and engagement plan which links to the objectives of the 2014-2021 Waste Management Plan.
2. Key audiences covered in the plan should include households, businesses, schools, contractors and internal stakeholders.
3. Source contribution to funding for the delivery of the plan from contractors as part of their service contracts with Council.
4. Responsibility for management, delivery and review of the plan rests with Council.

### **WASTE EDUCATION AND ENGAGEMENT FEEDBACK**

All stakeholders agree that a strategic approach to waste education, engagement and communications is needed, and that a plan be developed to support the waste strategy. Stakeholders also agreed that the context type information provided during the consultation sessions would be welcomed by residents, and suggested Council doesn't 'dumb down' the information to its residents.

Feedback and comments below were provided by stakeholders during the consultation sessions.

- External stakeholders
  - Education in Knox was very good with introduction of new bins but it has not been carried on.
  - Education is lacking in Knox compared with other councils.
  - Initiatives in education are too policy driven.
  - Knox council does a good job except in education.
  - Knox is "poor" in dollar terms when it comes to waste education.
  - Not enough budget when it comes to initiatives that focus on recycling.
  - Other councils seem to handle waste education – look at other examples at what is happening.

- Waste education is important.
- Waste education is the key but is often a “side stepped issue” and must include enforcement that is unpopular.
- Waste education programs are not reviewed frequently.
- Support for behavioural change is needed.
- Residents
  - “Lived in Knox for 26 years and I didn’t know about different bin sizes. I don’t go to the Knox Festival” so wouldn’t get the information from public events such as this one.
  - New residents are unsure about what goes in what bin. “When we first moved in it was confusing. There was nothing in the house to tell me!”
  - All received the waste education booklet/calendar. Residents are using the calendar to check days and remind what can be put in. Preference is for a publication rather than online information.
  - Need for ongoing education was mentioned “my own family still gets mixed up”.
  - What's the easiest way to educate about the smaller waste bin availability? Suggestions were to put it out with rates notice, or provide a flyer about “what are you paying for? What do you have a choice of?”

## **OTHER COMMENTS & FEEDBACK**

### **COST OF WASTE SERVICES/MANAGEMENT**

- External stakeholders
  - Carbon price could be between \$16-20 per tonne of waste sent to landfill in 2013-14.
- Internal stakeholders
  - Internal stakeholders see the pricing of waste services in Knox as very good. Residents suggested that renters are a missed opportunity because Landlords won't pay extra for additional services like garden waste which could help reduce waste.
  - Comment from internal stakeholders that the residents should be made aware of the cost of waste management and what goes into it.

### **WASTE CONTRACTS**

- External stakeholders
  - Knox City Council is good to work for, with no hierarchy, and meetings are held at least once per month at alternating locations. Quality could be improved, though, as the Chain of Responsibility requires Council to address the law.
  - Councils with growth or potential for changes in location should ask contractors when new trucks will be required with appropriate allowance in tender rates.
  - Knox contract for waste collection is difficult for small contractors to tender as they cannot cut prices to win tenders, and margins are very low for waste collection although there is good cash flow.
  - Risk to contractors in responding to tenders include: Volumes must be guaranteed by Councils; Information must be highly detailed; Liquidated damages/penalties should not be too onerous – Contractors cannot guarantee that all bins will be collected exactly as specified e.g. lids closed as this opens up unfair penalties and fines.
  - Tenders that attract cheap options that are not sustainable or risky need to be evaluated for risk first before considered seriously – this means tightening up the risk evaluation criteria.

- Internal stakeholders
  - There are individual requirements for each council even neighbouring councils, and the question was raised whether contracts are specific to a Council.

## **COLLECTION AND TRANSPORT**

- External Stakeholders
  - Alternative environmentally friendly fuels become available during term of contract.
  - Collection vehicles – consider the effect on environment in streets.
  - Trucks are at end of their environmental performance after 5 years.
  - Where materials will be dropped off – MRF, Organics facilities, landfills, changes to locations for a long term affect numbers of trucks needed e.g. Coldstream then to Dingley for green waste, western suburbs councils to go to Bulla.
  - Chain of Responsibility legislation in Victoria is aimed at mass management, driver fatigue, maintenance and compliance and applies to the waste management industry.
  - Knox collection areas need revising and “start from scratch” as there are too many collections occurring on Thursday and Friday (growth down south) should be done after new contract has been bedded down (say 6 months) with mass of education leading to change.
  - Owner driver (DWC) contract model abdicates responsibility to 3rd party direct contract control compromising “chain of responsibility”.
  - Collection technologies at kerbside need only “tweaking” e.g. in cab on road monitoring, cameras etc.
  - Waste collection contractors should have compliant mass management including in truck scales as appropriate to meet Vic Roads’ standards.

## **STATE WASTE POLICY**

- External stakeholders
  - Suggested Council refer to the Victorian Draft Resource Recovery Policy in developing their strategy. The Metro Plan should be available by June 2013, and Council should refer to the State wide Infrastructure Plan to enable it and industry to make informed decisions.



- Avoidance is a major issue to be included in a chapter of the State Resource Recovery Policy. The new focus is on food organics at a state wide level plus detox waste and other products with value such as electronics and phones. Greater resource recovery options will be supported by responsible authorities.
- Further, it has been suggested that for policy direction Council should use:
  - a. Market drivers rather than reduction targets.
  - b. Market demand and standard for products.
  - c. Community service.

## **LITTER**

- External stakeholders
  - Litter and public place recycling should not be separated – all to one MRF for sorting so recyclables diversion can be maximised.
  - Litter should be considered as Public place recycling and all litter should be taken to a MRF (although dog poo could be a problem).
  - Recycling litter should be explored as this is done successfully apparently at least 2 other councils.

## **E-WASTE**

E-waste issues are being considered at a state and federal level at the moment.

## **WASTE AUDITS**

- External stakeholders
  - Waste audits could be improved. The current 100 bin audit is could be improved re materials and methodology and is not particularly meaningful. The Methodology for bin audits and recyclables audits could be improved by using random selections of streets across municipal districts including garbage and recycling bins.
  - It has been observed that across all councils that have garbage bin audits, and confirmed by others in the industry “about 20% of garbage bin waste is recyclable”.
  - Sustainability Victoria will be conducting garbage bin audits in 2013 across a selection of Victorian councils. Knox will be able to view state wide results but these will not be specific to any particular service or location. Knox is advised to undertake its own bin audits focusing on food waste, household chemicals and recyclables.

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# APPENDIX B

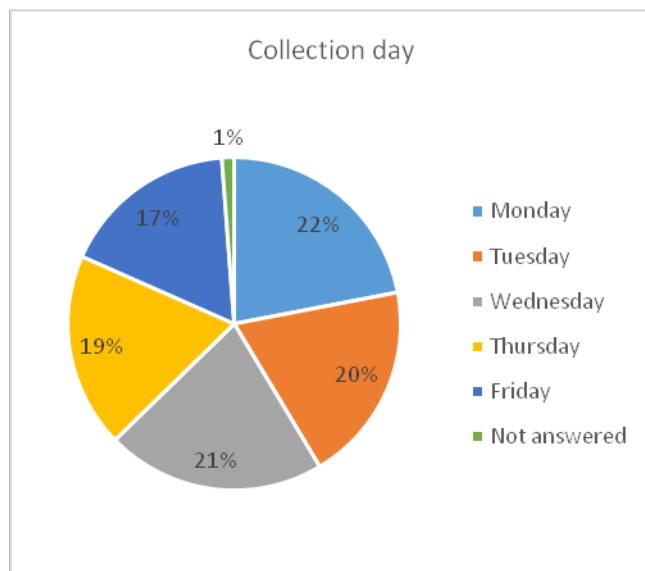
## Community Survey Questions and Responses

# Knox City Council Waste and Recycling Survey Summary report

## About the survey

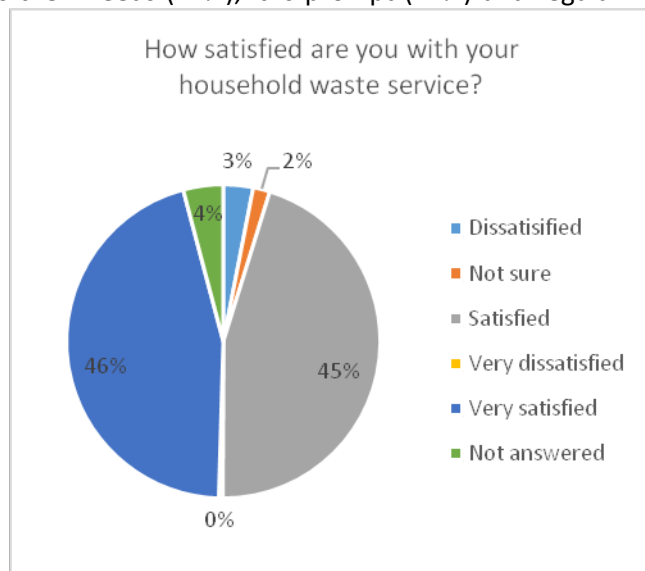
A waste and recycling survey was mailed to 2500 residents in May 2013. It was also promoted through an advertisement in the Leader Newspaper, online via Council's website as well as Facebook and Twitter. Most of the 751 responses (an overall response rate of 30%) were received from the mail out (651 responses = 87%). The survey provides a representative sample of the Knox community, with an even spread of response across waste collection days and from different household types.

Following is an overview of the key findings of the survey. An in depth commentary is also provided.



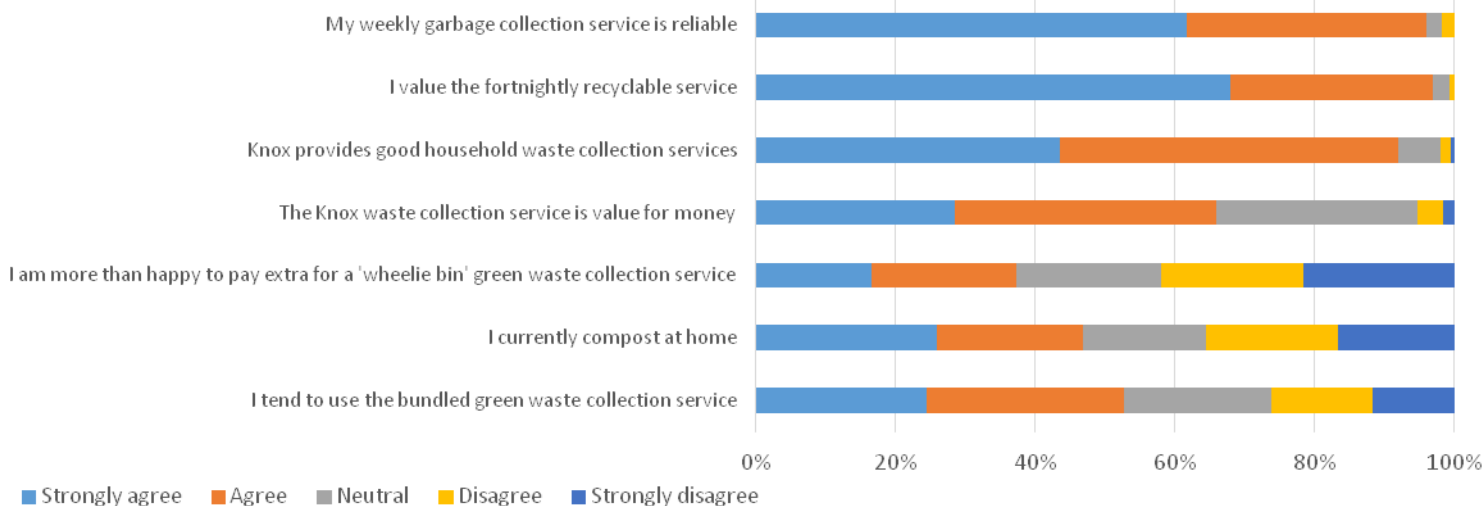
## Residents are satisfied with the service

- 94% of residents are satisfied or very satisfied with their household waste collection services. The main reasons cited for why they were satisfied or very satisfied were that the service is reliable (20%), it meets their needs (14%), it is prompt (12%) and regular (11%). 8% of respondents commented that they appreciate the recycling service
- Reasons why residents were dissatisfied or very dissatisfied with the service included that bins are collected late (1%), the service is messy (0.8%), or they have issues with the green waste service (0.8%) ranging from wanting more space or more regular collection of green waste bins
- Residents highly value the fortnightly recycling service and see garbage services as reliable. They tend to see the waste collection service as offering value for money, although they appear to be less than happy to pay extra for a wheelie bin services
- 92% feel Knox provides good household waste collection services
- 46% of respondents indicated that they compost at home



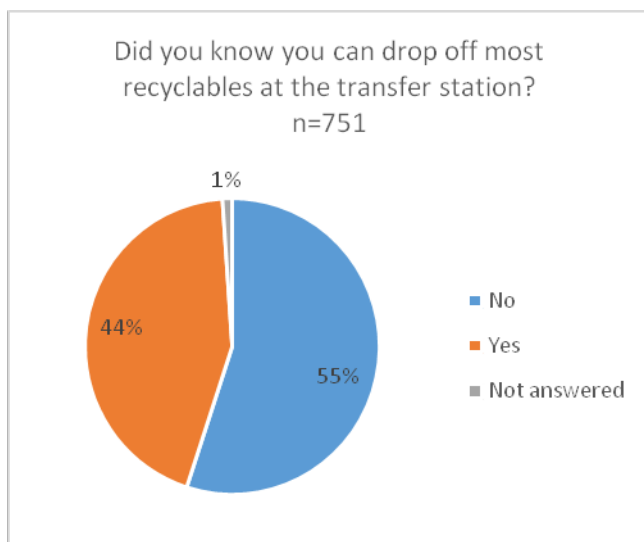
## How much do you agree with the following statements?

n=751



## Recycling services

- There is moderate support for providing a more frequent or larger recycling service, particularly if residents are not asked to pay extra on rates for the service.
  - 42% said yes to the option for a 360 litre bin emptied fortnightly, only 8% are prepared to pay extra
  - 42% said yes to the option for the 240 litre waste bin to be emptied weekly, only 7% are willing to pay extra
  - 32% said yes to the option for a second 240 litre bin emptied fortnightly, only 10% are prepared to pay extra
- 35% answered 'yes' to all three options
- 55% of respondents did not know they could drop off recyclables at the transfer station for free, indicating there may be a need for increased promotion of this service



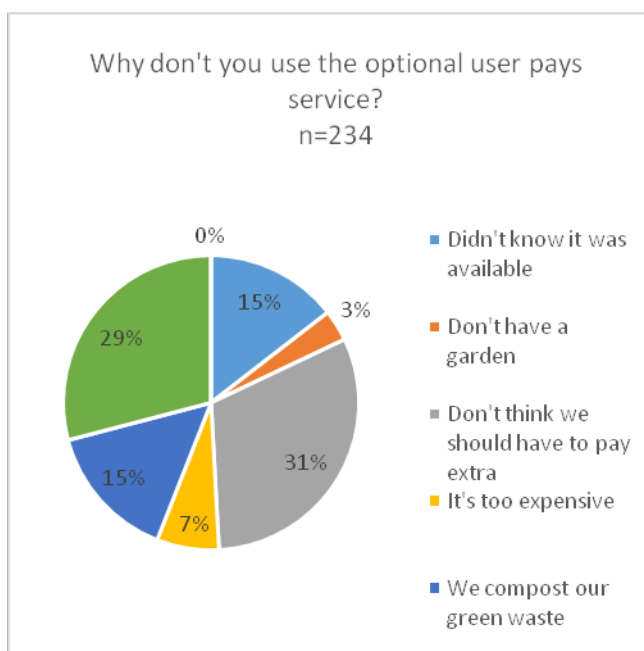
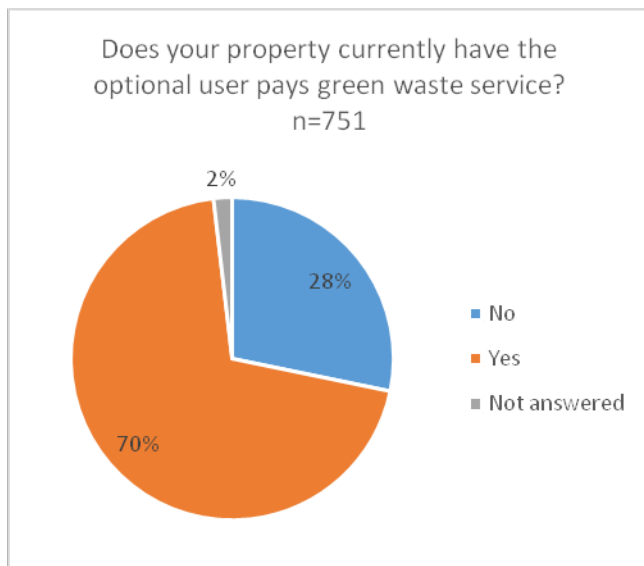
## Green Waste Services

### Which services do residents have/use?

- 71% of residents have the optional user pays green waste service (user pays green waste bin). This correlates with Council rates data which shows 71% of residents have this service
- 35% use the 'no extra charge' bundled branch/resident own container service (bundled/own container collection)
- 20% use only the bundled/own container collection
- 43% use both services and 9% use neither service

### Why don't residents use the user pays service?

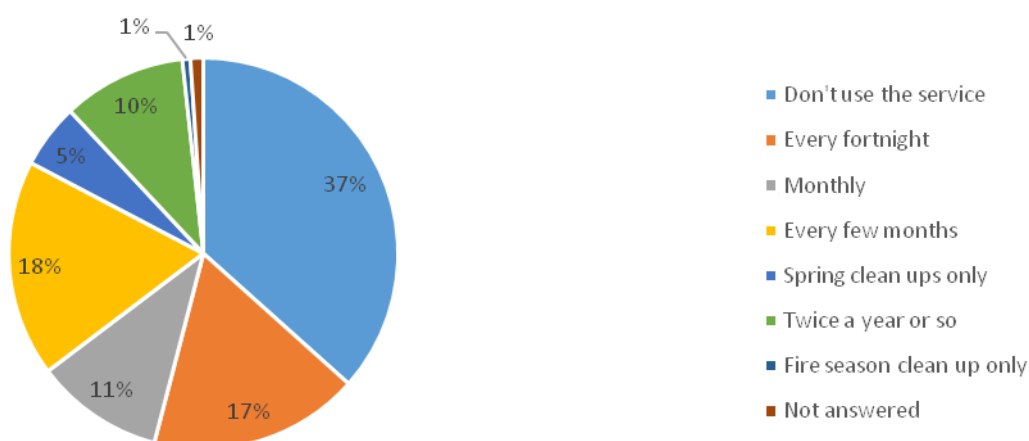
- 73% of those who don't use the user pays green waste bin provided a reason why:
  - 44% had a price based reason with 32% saying they shouldn't have to pay extra while 12% saying it is too expensive
  - 18% compost their green waste
  - 14% didn't know it was available
  - 9% don't have enough garden waste (either no garden or a very small garden)
  - 6% use the bundled branch/own container service instead
- Other comments as to why respondents don't use the service included:
  - the bundled branch/residents own container service suits their needs better
  - they clean up leaves from Council trees so don't think they should pay for a wheelie bin
  - they choose to use the bundled branch/residents own container service over the wheelie bin service because it doesn't cost them anything



### Frequency of use of the bundled/own container collection

- 36% of respondents don't use the service
- 34% use the service less than monthly (either every few months, for spring/fire season clean ups or twice a year or so)
- 18% use the service fortnightly
  - 6% use bundled branch/residents own container service fortnightly and don't have the user pays green waste bin
- 11% use the service monthly

How often do you use the bundled branch/own container service?  
n=751

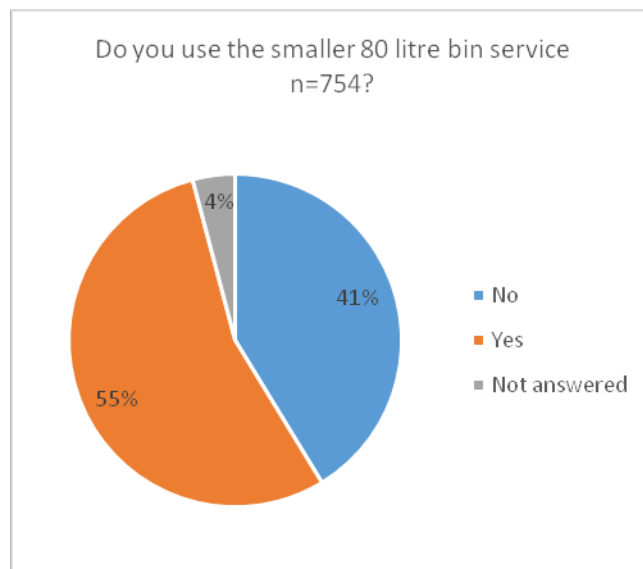


### Preferences if Council is to change the bundled/own container green waste services

- Given the framing of this question and providing respondents the option 'I would prefer no change to the service', it is not surprising that overwhelmingly this was the most selected option (85%)
- Further analysis was done to investigate the response in context, which included looking at the preferences based on the frequency of service use revealing:
  - 83% of respondents currently use the service less often than fortnightly (see previous section)
  - There is evidence to support some change in the frequency of service provided, particularly when it comes to the bundled branch collection (8% of fortnightly users support this, while 25% of those who use the service less than fortnightly support it)
  - There is greater willingness to switch from the own container service to the user pays green waste service by those who use the bundled/own container service less frequently than fortnightly (17% compared to 7% who use it fortnightly)
  - Assuming residents would like to continue using the service how they currently do (reading the question as 'I would prefer no change to MY service') it is possible that a change to a monthly or an at call branch collection would suit 84% of residents
- Residents who don't use the optional user pays service but use the bundled branch/residents own container service fortnightly are the least likely to prefer a change to the current service (18% - see previous section)

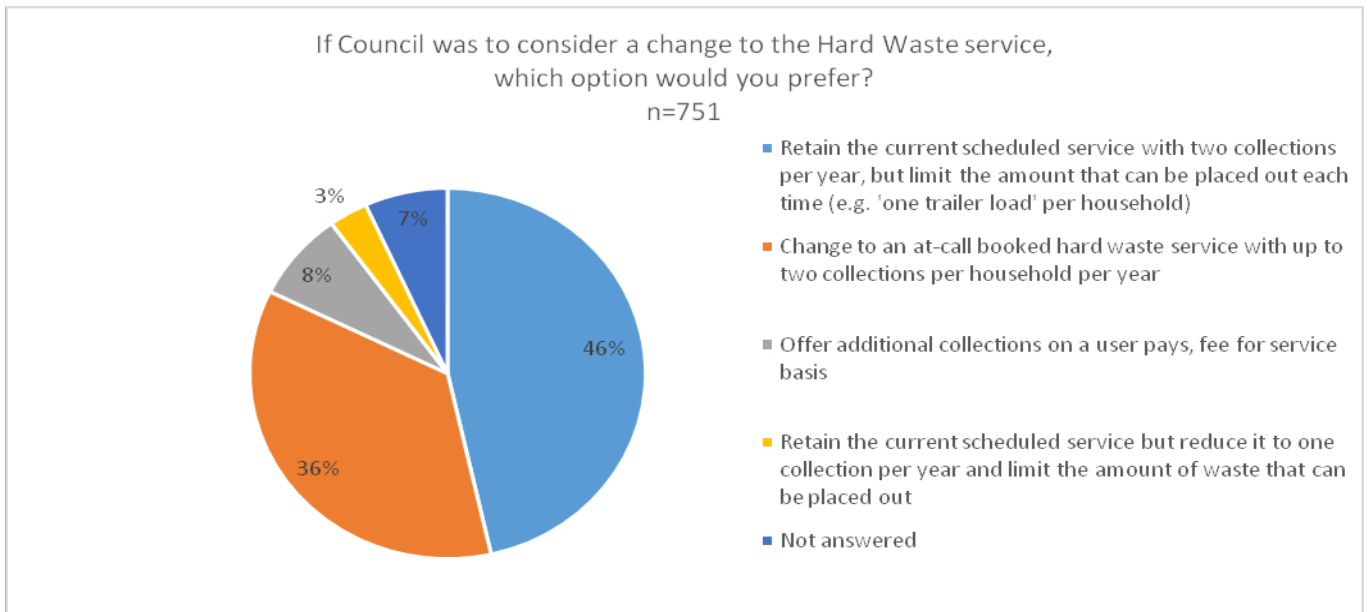
## Garbage Services

- 55% indicated they believe they currently have the 80 litre garbage bin (does not correlate with actual 37% of Knox residents). Several respondents made comment that they did not know this option was available
- Residents are supportive of Council implementing programs which support their residents to take responsibility for reducing waste going to landfill
  - 47% suggest Council should run programs to support initiatives to reduce waste in the home
  - 47% of those who answered this question believe Council should run a program to encourage more residents to change over to a smaller 80 litre bin
  - 46% believe Council should support initiatives such as worm farms and composting bins
  - 18% made further suggestions about how Council could achieve waste reduction. Ideas included providing more education to the wider community (not only in schools), improving recycling rates and promoting home composting and worm farming
  - 14% suggest Council should invest in technologies to sort recoverable material from garbage. The phrasing of this response may have impacted the response, with the bracketed mention of cost potentially causing bias on the response



## Hard Waste collections

- 46% of respondents who answered the question would prefer to retain the current scheduled service, but limit the amount of waste that can be placed out
- 36% prefer an at call booked hard waste service
- 8% indicated they wanted additional collections on a user pays, fee for service basis (similar to at call)
- 7% did not answer this question
- The majority of comments received across the survey were about hard waste services, including:
  - asking Council to consider reintroducing a tip voucher scheme or discount drop off for residents at the transfer station to reduce the cost of waste disposal between hard waste collections
  - suggesting Council should encourage non-commercial scavengers to neatly take waste from people's hard waste piles as it reduces the amount of waste taken to landfill
  - perceptions on illegal dumping, including that placing limits on collection, or switching to an at call service would lead to more instances of dumping
  - believing the service should be left as is
  - welcoming the introduction of an at call service



### Communications about waste and recycling

- 28% of respondents made a suggestion on how Council could enhance communications about waste and recycling. The most common comments included:
  - Advertise information about waste and recycling more often, especially in the local newspaper.
  - The annual waste and recycling booklet/calendar is excellent and residents like receiving it.
  - A brochure about recycling and waste should be included with the annual Rate notice.
  - More regular updates are needed on services offered.
  - Using email, social media and the internet to communicate with residents.
- Residents seem unaware of the options available to them including smaller 80 litre bins, the user pays green waste service, free recyclables drop off at the transfer station and the bundled branch service.
- Others commented that more information and community education about waste reduction and waste in general would be welcomed.
- There were a few comments where residents commented that the information provided in the introduction to the survey was useful and new to them.