

Waste Services Departmental Activity Report



Contents

1	Introduction.....	1
1.1	Legislative Framework	1
1.2	Population and Waste Volume Projections.....	4
1.3	Budget.....	6
1.4	Organisation Structure	7
1.5	Corporate Business Plan Functions.....	8
2	Overview of Waste Services	9
2.1	Collection Services	9
2.1.1	Kerbside collections.....	9
2.1.2	Verge collection service.....	17
2.1.3	Tip Passes.....	20
2.2	Disposal Services	22
2.2.1	Roleystone Green Waste Facility.....	22
2.2.2	Armadale Landfill and Recycling Facility	23
2.3	Special Services	31
2.3.1	Special Bin Services.....	31
2.4	Education and Compliance	32
2.4.1	Illegal Dumping and Litter.....	33
2.4.2	Discussion	34
2.5	Waste Administration	35
2.5.1	Discussion	35
3	Waste Charge Comparison.....	36
4	Rivers Regional Council	37
5	Recommendations.....	38

WASTE SERVICES DEPARTMENTAL ACTIVITY REPORT

1 Introduction

Waste Services operates with approximately 30 FTE staff with an annual budget of approximately \$12,5m, and is broadly divided into three operational areas as follows:

- Collections, based at the Operations Depot, Owen Rd Kelmscott
- Disposal, based at the Hopkinson Road Landfill and Recycling Facility
- Administration, based at Orchard House

It is the intent of this report to provide details of the services provided by the Waste Services Department within the Technical Services Directorate. Provide information as to trends in the consumption of the services offered, the costs of these services, and anticipated changes to operations, mostly necessitated through the drive for efficiencies, but also by technological developments.

1.1 Legislative Framework

Waste Management in Western Australia is governed by a large range of Legislation and Regulations including the following:

- *Waste Avoidance and Resource Recovery Act 2007 (WARR Act)*
- *Waste Avoidance and Resource Recovery Act Regulations 2008*
- *Waste Avoidance and Resource Recovery Levy Act 2007 (WARRL Act)*
- *Waste Avoidance and Resource Recovery Levy Regulations 2008*
- *Landfill Waste Classification and Waste Definitions, DEC 1996*
- *Assessment Level for Soil, Sediment and Water, DEC 2010*
- *Environmental Protection Act 1986 (EP Act)*
- *Environmental Protection (Controlled Waste) Regulations 2004*
- *Environmental Protection (Noise) Regulations 1997*
- *Litter Act 1979*

The main piece of Legislation affecting the City is the WARR Act supported by the EP Act, with the other documents providing guidance and regulation on the City's waste management practices.

The Waste Avoidance and Resource Recovery Act 2007 (WARR Act) and Waste Avoidance and Resource Recovery Levy Act 2007 (WARRL Act) passed through Parliament in December 2007, with The Waste Avoidance and Resource Recovery Regulations 2008 and

The Waste Avoidance and Resource Recovery Levy Regulations 2008 being gazetted on 1 July 2008.

5. Objects of the Act

- (1) The primary objects of this Act are to contribute to sustainability, and the protection of human health and the environment, in Western Australia and the move towards a waste-free society by —
 - (a) promoting the most efficient use of resources, including resource recovery and waste avoidance; and
 - (b) reducing environmental harm, including pollution through waste; and
 - (c) the consideration of resource management options against the following hierarchy —
 - (i) avoidance of unnecessary resource consumption;
 - (ii) resource recovery (including reuse, reprocessing, recycling and energy recovery);
 - (iii) disposal.

The WARR Act 2007 also reflects the principles set out in the Environmental Protection Act 1986 section 4.

The purpose of the WARR Act is to:

- provide for waste avoidance and resource recovery
- establish the Waste Authority
- provide for waste services by local governments
- provide for levies on waste
- repeal the *Environmental Protection (Landfill) Levy Act 1998*
- provide for related and consequential matters

At the same time as the WARR Act 2007 was being developed, the Health Act was undergoing major reforms. These changes have implications for waste management. The new Public Health Act 2016 (25 July 2016) and the enactment of the WARR Act 2007 have seen all regulations relating to waste and waste management shift from the Health Act 1911 to the WARR Act 2007.

The Waste Authority was established on 6th May 2008 with the appointment of its five members. The Authority, which replaces the Waste Management Board, commenced full operation on 1st July 2008. Some of the main areas of responsibility for the Authority include:

- Developing, promoting and reviewing a waste strategy for Western Australia and coordinating its implementation.
- Promoting community awareness and understanding of resource efficiency, waste avoidance and resource recovery.
- Working with local government to coordinate local efforts to prevent waste.
- Administering the Waste Avoidance and Resource Recovery Account.

- Advising and making recommendations to the Minister for the Environment on matters relating to the WARR Act.

The Waste Authority is fully funded through the Waste Avoidance and Resource Recovery Account while the Department of Environment Regulation (DER) provides executive, administrative, and contract management support to the Authority. DER also coordinates project specific activities on behalf of the Authority.

The Department of Environment and Conservation (DEC) was a department of the Government of Western Australia that was responsible for implementing the State's conservation and environment legislation and regulations. It was formed on 1 July 2006 by the amalgamation of the Department of Environment (DoE) and the Department of Conservation and Land Management (CALM).

The DEC was separated on 30 June 2013, forming the Department of Parks and Wildlife (DPaW) and the Department of Environment Regulation (DER) which both commenced operations on 1 July 2013.

The Department of Environment Regulation (DER) focuses on environmental regulation, approvals and appeals processes, and pollution prevention while DPaW focuses on nature conservation and the community's enjoyment and appreciation of Western Australia's world-class network of national and marine parks.

The purpose of the DER is to advise on and implement strategies for a healthy environment, for all Western Australians. The agency provides services relating to:

- Environmental Regulation—regulating activities with potential impacts on the environment, specifically the EP Act.
- Environment Policy—developing and implementing policies and strategies that promote environmental outcomes.
- Waste Strategies—reducing the environmental impact of waste.

The DER issues the City Licences to operate its two facilities namely, Armadale Landfill and Recycling Facility and the Roleystone Green Waste Facility, and undertakes regular compliance inspections. The City's Licences provide the framework for how each facility must operate to ensure that the environment is protected.

The City also has its own **Local Laws** which control aspects of waste management within the City including:

- Environment, Animals and Nuisance;
- Health;
- Parking;
- Removal of Refuse, Rubbish, Litter and Disused Materials.

The above Local Laws are enforced by Health Services and Ranger & Emergency Services.

Enabled under the WARR Act, many other Local Governments are introducing a Local Law specifically covering waste management, with the latest being the City of Wanneroo and the City of Gosnells. The City of Armadale will also be drafting a Waste Local Law that will

update and centralise many of the current separate sets of waste legislation which are contained in a variety of locations.

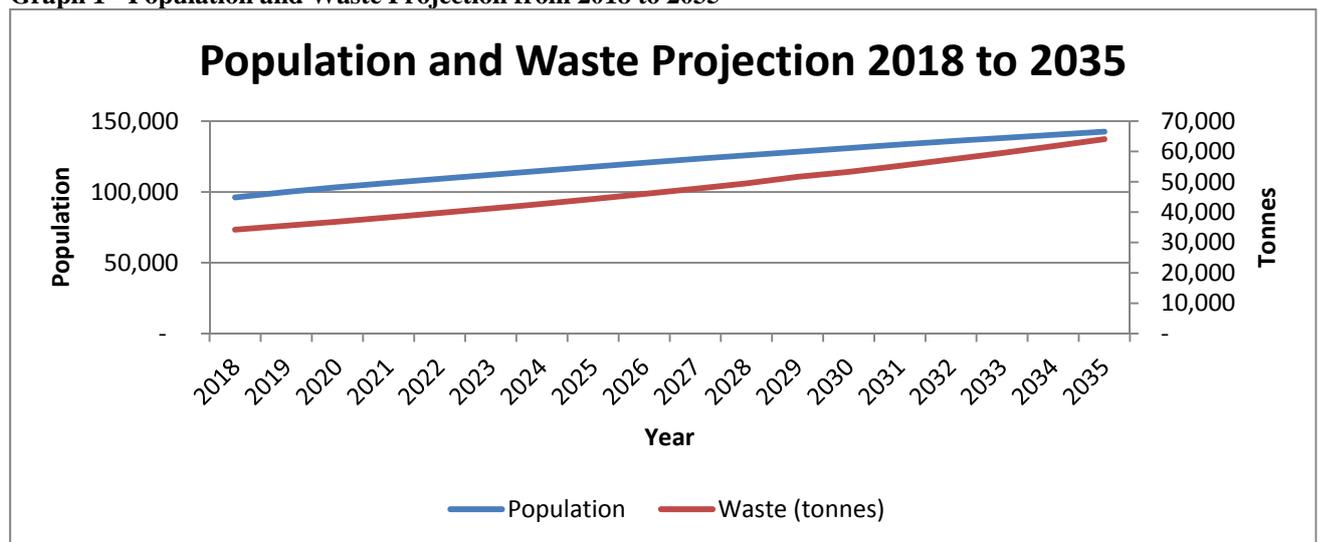
1.2 Population and Waste Volume Projections

Armadale is one of the fastest growing Local Governments in Western Australia, with a current population of 76,885. The current forecast population projection and subsequent anticipated waste generation for the City is shown in the following table:

Table 1 – Population and Waste Generation Growth from 2018 to 2035

	2018	2019	2020	2021	2022	2023	2024	2025	2026
Population	96,140	99,937	103,356	106,357	109,250	112,152	114,997	117,806	120,617
Waste (tonnes)	34,260	35,545	36,878	38,260	39,695	41,208	42,728	44,330	45,996
	2027	2028	2029	2030	2031	2032	2033	2034	2035
Population	123,258	125,877	128,419	130,942	133,527	135,850	138,132	140,371	142,585
Waste (tonnes)	47,718	49,508	51,663	53,290	55,288	57,361	59,512	61,744	64,060

Graph 1 - Population and Waste Projection from 2018 to 2035

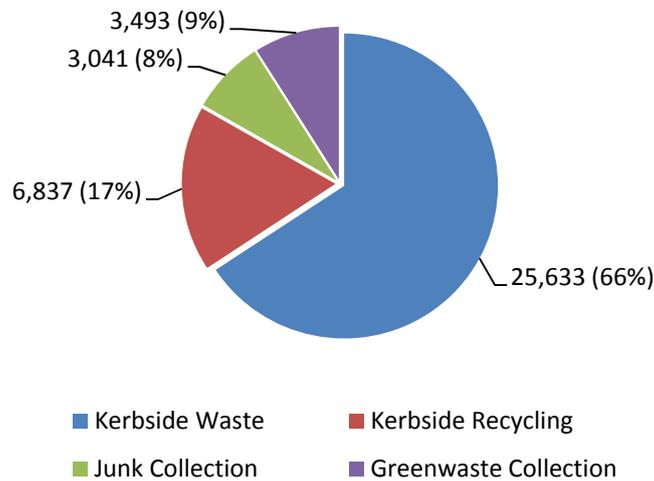


In general terms, the current volume of waste generated phh pa (per household per annum) amounts to some 85 kg, measured against the State average of approximately 1000kg phh pa. This is expected to increase to approximately 950 kg phh pa by 2035 as economic conditions improve in the City. This is demonstrated by the narrowing of the gap between the two trend lines as depicted in Graph 1 above.

The amount of material collected in 2015/16 by the City in its collection services is shown in the graph below.

Graph 2 – Waste Collected in 2015/16

Waste Collected (tonnes, percent)

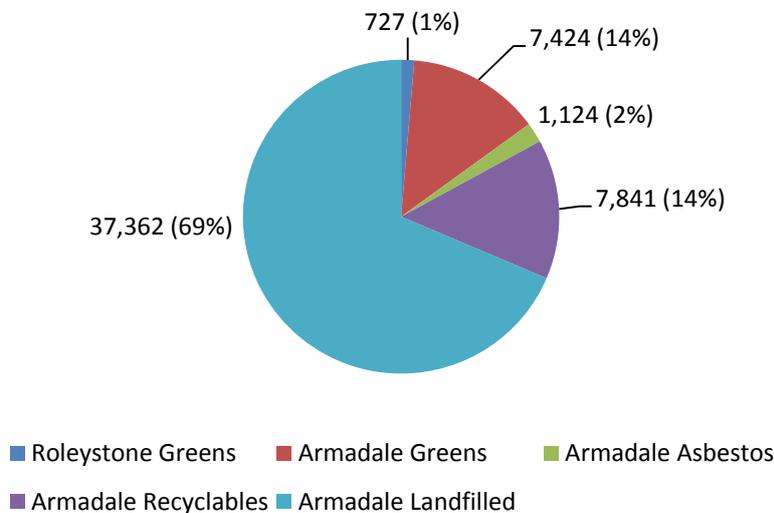


The City’s kerbside recycling collection rate of 17% is considered low when compared to other metropolitan Councils. The City has employed a Resident Liaison Officer (RLO) and is trialling another RLO whose role includes educating the public on correct recycling behaviour, auditing recycling bins, and assisting advertising efforts.

The amount of material received in 2015/16 by the City in its disposal services is shown in the graph below. The graph is broken down by the location where the materials were received.

Graph 3 – Waste Received in 2015/16

Waste Recieved (tonnes, percent)



1.3 Budget

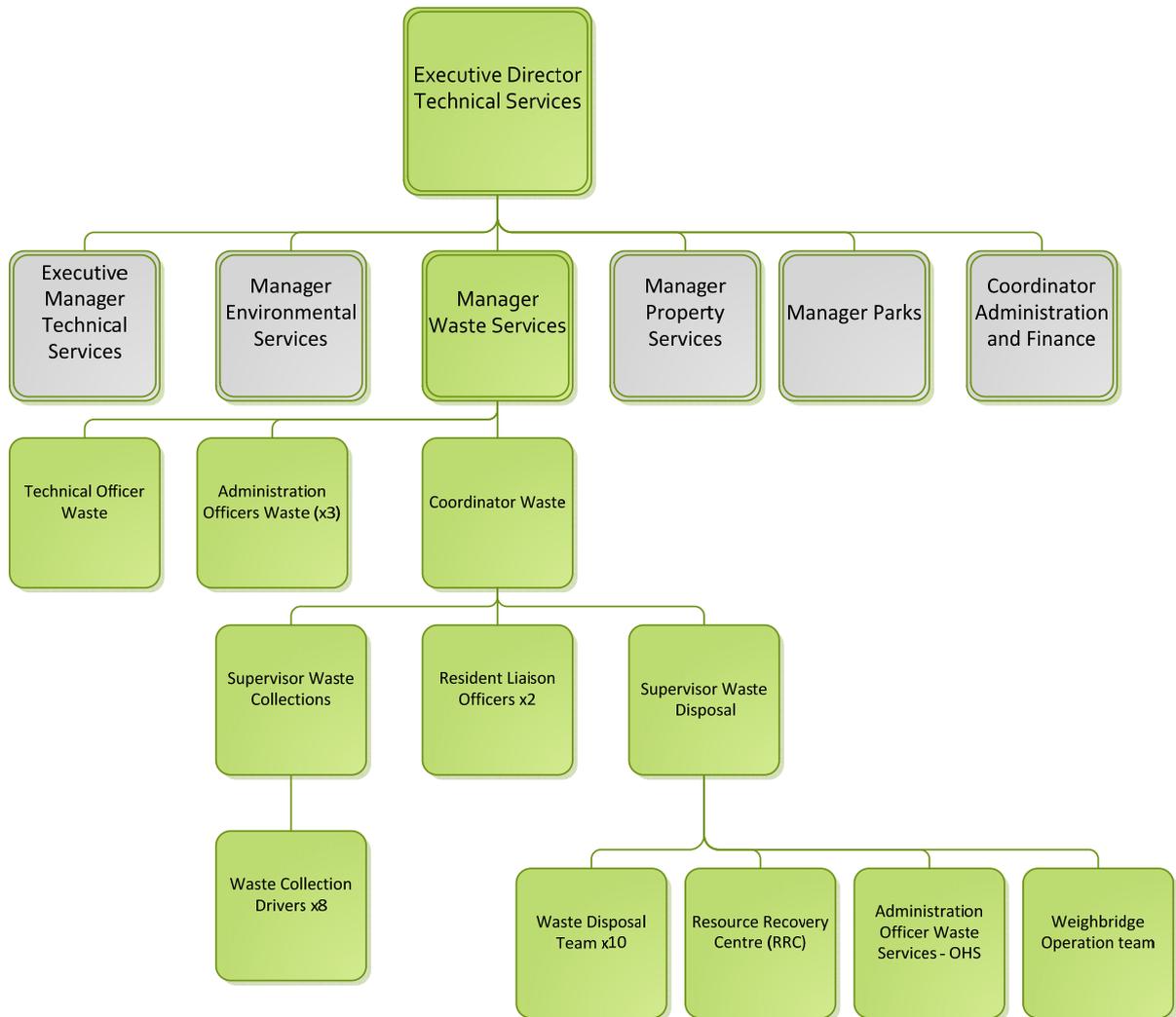
Waste Services in the City operates as a ring-fenced business unit which means that the service is not funded from the Municipal account, but generates income through a separate schedule of fees and charges specifically related to the waste services provided.

The following main budget elements form part of the 2016/17 financial year budget for Waste Services.

Description	Budget
Consultancy – General	\$560,000
Brookdale Site Operations – Landfill site	\$6,600,974
Roleystone Site Operations	\$116,000
Offsite Disposal	\$27,600
Waste Collection Service	\$2,332,600
Recycling Collection Service	\$899,600
Verge Collection Service	\$1,300,000
Resource Recovery Facility Operations	\$587,200
Landfill Gas Flare Operations	\$55,000

1.4 Organisation Structure

The services provided by the Waste Services Department are delivered by means of the below organisational structure:



1.5 Corporate Business Plan Functions

The services delivered by the Waste Services Department serve to meet the Corporate Business Plan requirements as follows:

2.4 Best Practice Waste Management

2.4.1 Apply effective waste collection methodologies

2.4.1.1 Investigate alternate verge collection methodologies

2.4.1.2 Investigate collection fleet requirements

2.4.2 Maximise recycling opportunities

2.4.2.1 Investigate construction and demolition waste recovery feasibility

2.4.2.2 Investigate commercial and industrial waste recovery feasibility

2.4.3 Improve waste disposal practices

2.4.3.1 Implement a Transport Study for the Resource Recovery Facility

2.4.3.2 Investigate the management of household hazardous waste

2.4.4 Apply efficient waste administration

2.4.4.1 Implement advanced technologies in route planning and management

These CBP strategies are referenced throughout this report and include in the recommendations as applicable.

2 Overview of Waste Services

The City of Armadale provides comprehensive waste management services to its Residents and Local Businesses to ensure that its obligations under the *Waste Avoidance and Resource Recovery Act 2007* are met and to ensure that public health and the local amenity is protected. The City's waste management service consists of:

- Collections:
 - Kerbside Waste;
 - Kerbside Recycling;
 - Verge Junk; and
 - Verge Greenwaste;

- Disposal:
 - Armadale Landfill and Recycling Facility:
 - Landfill;
 - Drop 'n' Shop; and
 - E-shed;
 - Roleystone Greenwaste Facility;
 - Tip Passes;

- Education and Enforcement; and
- Administration.

2.1 Collection Services

2.1.1 Kerbside collections

The City provides residents with a weekly household waste (rubbish) collection and fortnightly household recycling collection. The 240 litre mobile garbage bin is the current standard bin size. A dark green bin with same colour lid is used for household waste collection and a green bin with a yellow lid is used for household recycling collection.

2.1.1.1 Household Waste

The estimated cost of providing this weekly service to approximately 31,000 households is \$2,332,600.

This, the COA “Flag Ship” service, provided weekly by COA labour and waste collection vehicle fleet and is the pride of COA Waste Services. The high positive rating that kerbside waste collection services achieves during community perceptions surveys can be contributed to:

- a) The level of service of the Waste call centre. The call centre operators are in direct contact with the waste drivers via two way radio and almost all complaints are dealt with promptly while the complainant is on the line.

- b) Waste drivers do go back and empty bins that were missed, even if the resident failed to place the bin on the verge or was late putting it out.
- c) Basic bin repairs such as the replacement of lids, pins, wheels or axles are done by the waste driver during the collection round. Waste trucks also carry a spare bin that is used to replace the occasional badly damaged or destroyed bin.

To date the size of service rounds are determined by a count of number of bins to be serviced in the round. However this method means that the seasonal change to the content of the bins is mostly ignored. The routes that are followed in a collection round are also being left to the discretion of the driver. On specific routes travelled there may be room for improvement, and these opportunities will be further discussed in this report.

These and other considerations related to the improvement and increased efficiency of the collection service are being revisited at this time, with discussion detailed below:

2.1.1.1.1 Discussion

Whilst the kerbside collection services operate very effectively and returns high positive ratings with every community perceptions survey, there are some areas which could be considered for further improvement to the service, with a particular view to efficiencies.

1 Morning Starting Times collecting waste

With the increasing vehicle volumes in the City, and with the waste collection services commencing at 07h00, there is an immediate conflict with traffic on all the main collector roads in the City on all collection days, including the collection of waste in the Central Business District (CBD). This results in queueing behind the waste vehicles, and car drivers taking unacceptable risks in overtaking the waste collection vehicles where no clear sight lines are available. In the case of the CBD, it would be preferred that waste is collected early in the morning before delivery vehicles and the general public start entering the area and make the movement of waste collection vehicles more difficult.

The solution applied by most other Councils to this concern is to commence waste collections at 06h00, and immediately address the collections on the busiest roads and CBD for the first hour of the day while traffic volumes are lower, and then to proceed with the normal collection rounds thereafter away from the main collector roads.

The issue of early morning noise can be raised at this juncture, and the requirement in terms of the Environmental Protection Act 1986 and Environmental Protection (Noise) Regulations 1997 is that the City must have an approved Noise Management Plan. It is suggested to be addressed as follows:

- a) Develop a draft Noise Management Plan for Collections;
- b) Submit Plan to the City's Health Services for consideration;
- c) Implement early collections in line with the Plan.

2. Bin Collection Location

The City currently collects from both sides of a street, necessitating traversing all roads twice on each collection day. It is however possible to have the bins placed on only one side of the street, in theory halving the travelling distance, and substantially decreasing the time taken to complete the collection rounds, and reducing operating costs considerably. This would be a more viable arrangement in the quieter urban residential streets, but would not be a consideration on a collector or distributor road.

This option is however open to criticism as residents will in some instances have to take their bins across the road to place them in front of someone else's property, which may result in potential allegations of creating an unsafe situation for residents, particularly in the urban environment. Residents have also previously raised issues with other residents placing their bin on the verge in front of their property creating a neighbourhood conflict, this is particularly concentrated to cul-de-sacs where boundaries are not particularly clear.

In the rural environment however, the number of bins are few and far between, and it would be a real possibility to have all bins presented on one side of the road. This is a very safe option and not an onerous expectation of residents. This will certainly increase efficiencies and reduce costs. It is suggested that this methodology be trialled in some defined rural areas for a period of 12 months to allow for the pattern to be established in an area, and for the residents to make the necessary behavioural changes.

3 GPS Implementation

Since the development of GPS technology, applications in the waste management industry have been found to increase efficiencies by leaps and bounds. GPS developers have been working with local government and waste collection vehicle manufacturers to develop GPS applications with functionality on an easy to use, multi user web based environment. The following functionality is fairly standard amongst the current service providers:

- Tracking vehicles in real time
- Display of bins lift locations
- Replay journeys
- Ability to report on data such as:
 - Bin lift counts per route/period
 - Distances travelled & time taken
 - Tipping times and distances.
- In Vehicle Data Terminals provide further functionality such as:
 - The logging of road maintenance issues such as potholes, overhanging tree branches, etc.
 - The logging of bin issues like bin not out, bin too heavy, bin maintenance demand.
 - Logging of unscheduled Jobs and Diversions.
 - GPS Navigation
 - Two-way messaging between the vehicle and the administration office.

- Other functionality that may also be added are items such as:
 - Video recording of 4 or 5 on-board cameras
 - Photo capture and reporting of “Bin Not Out” (very handy when residents provide assurance of compliance regarding bin being placed out for collection.)
 - Pre-Start vehicle checks
 - Unique driver identity cards that identifies the driver of the vehicle.
 - Engine management and service reminders
 - Other driver behaviour monitoring such as harsh breaking and harsh acceleration.

The Routes of the collection vehicles have been developed utilising the local knowledge of each operator and have not largely changed since inception. This means that as new operators are employed they either require lengthy one-on-one training in respect to established routes or they develop their own collection routes which may not be optimal.

GPS technology has been developed which can record all the collection locations in the City in a database which can then be analysed by Route Optimisation Software to determine the most efficient collection rounds and routes for each available collection vehicle. Waste Services has made provision in the 2016/17 budget to introduce this technology on the waste collection vehicles and is in the process of preparing the specifications for this tender.

This was identified in the CBP Action 2.4.4.1 for implementation in 2016/17, and tender documentation is currently being prepared and will be advertised early in 2017.

4 Route optimisation.

In order to run an efficient waste collection operation it is important to manage personnel costs, travelling distances, fuel consumption, vehicle breakdowns, and other operational realities. Inefficient “legacy” routes, new home developments and the loss of local area knowledge due to a retiring workforce are factors that influence efficient waste collection. This was identified in the CBP Action 2.4.4.1 for implementation on 2016/17

Route Optimisation Software is now available that can analyse the GPS database containing bin locations in the City and then determine the most efficient collection rounds and routes for each available collection vehicle. The produced collection routes can then be trialled in real time under operating conditions, and fine-tuned to produce the most efficient collection route. This software has the potential to reduce the operating costs of collections by shortening routes and avoiding manoeuvres which add unwarranted time and distance to collection routes.

Once implemented routes can be adjusted and distributed to each collection operator making collections dynamic and responsive to new services or changes in road conditions. It also provides new operators with in-cab routing similar to that of an in-car GPS.

5 Household Waste Collection by Private Sector Contractor

The household waste collection service is provided weekly by the City. An alternative service delivery mechanism is that this service could be provided by the private sector through a contract. This was a consideration some years ago, where the City tendered to provide these services. This process provided a valuable comparison between the City providing the service and the service offered by the private sector.

The main differences were as follows:

- The City provided an improved response time to complaints or requests by the public.
- The City provided greater flexibility regarding special requests.
- The City provided greater flexibility regarding bin repairs/replacements.
- The City has the availability of staff in the field covering every street at least once a week. This provides for the reporting of otherwise unobserved requirements such as the following examples:
 - Road maintenance – potholes
 - Parks - overhanging tree branches
 - Street furniture - damaged traffic signs
 - Drainage – localised flooding
- The City provides a stable, reliable and very adaptable Own Brand service that can be changed according to prevailing circumstances, without the encumbrances of a contract to consider.

6 Provision of a Smaller Rear Loaded Compactor to Service High Density Developments

Over the past years Property development in Armadale continues to maintain an upwards trend. The City is dealing with brownfields development, where developers subdivide large older existing blocks into many smaller dwelling units. This places an increased pressure on Waste Services to provide collection services to new high density developments with confined spaces which are sometimes difficult to access with the current waste collection fleet. This matter has been identified during the Corporate Business Plan (Action 2.4.1.2) review in 2017/18, and is recommended for further study.

A possible solution is to provide these services with a smaller but less efficient vehicle which can more easily gain access to these spaces. Such a vehicle can double to service parks and street litter bins where either an open (non-compactor) vehicle or a large compactor is currently used for this purpose.

The feasibility of this solution is yet to be tested, but it is anticipated that the results of such a study will be available in 2017/18.

2.1.1.2 Household Recycling

The estimated cost of providing this two-weekly service to approximately 31,000 households is \$900,000 per year. The Household Recycling Collection service is contracted to the private sector, and is provided on a fortnightly basis.

Residents are encouraged to place the following dry recyclable items in their yellow top bins for collection:

- Plastic containers and bottles, including soft drink bottles, milk bottles, ice cream containers, yogurt containers and cordial bottles
- Aluminum, steel and aerosol cans, clean foil
- Milk and juice cartons (no silver lined UHT cartons)
- Glass bottles and jars (no lids)

- Newspapers, office paper, envelopes, magazines and advertising material
- Cardboard boxes, cereal and food boxes.

The contractor owns and operates their own materials recovery facility (MRF) where all recycled material collected by the contractor is sorted and recycled. The scale of the contractor's operations ensures viability for the contractor, as contractors have multiple clients which provide them with sufficient feedstock to reduce the unit costs of operations.

The contractor therefore has two income streams, the first being the income related to charges for recyclable collections, and the second the income related to the sale of recovered materials. While it is appreciated that the commodity prices of recycled materials does vary considerably depending on global market prices, in general these are still very viable operations for the private sector.

In order to assist the City's residents the contractor also operates a call centre that residents can call regarding their recycling service, recycle bins, missed collections etc.

2.1.1.2.1 Discussion

It must be noted that the relationship between the City's Waste department and the contractor is extremely good. Structured operational meetings between the two parties are held on a regular basis and cover topics such as:

- Level of services
- Call Centre and Complaints received
- Education & training
- Exchange of information
- Anticipated improvements and other changes

This interaction with the contractor works well and delivers the required results – which from the City's point of view is service excellence.

Whilst there may be an argument for the provision of this service in-house, the service provided by a contractor is reliant on the viability of a MRF to process and recycle the collected materials. As stated above, this demands huge volumes, and the City does not have the capital to develop such a facility, nor the access to the material to make this a viable option. The current contractors in the market have developed their infrastructure and mastered their processes regarding recycling over many years and it is highly unlikely that a council will be able to penetrate that market and be able to compete competitively.

Currently the service provided by the private sector remains very good, efficient and at a very low cost to consumers.

The City is currently in the second and final extension of the Recycling Collection contract and it is anticipated that a new recycling contract will go to public tender towards the end of 2016. It is anticipated that this tender would be on the same conditions as the current successful tender, and that the period of five years with two one year extensions again form the basis of the tender.

2.1.1.3 Three Bin Collection Service

On 15 January 2014, the Environment Minister announced a two-year, \$7.5 million programme or trial called “*Better Bins Kerbside Collection System*” (Better Bins System), that would provide local governments in Perth and major regional centres with funding to trial a three-bin system to improve kerbside recycling rates. The three bin system is proposed to consist of the following:

- A 80/120/140L Mobile Garbage Bin (MGB) with red lid for general household waste collected weekly;
- A 240/360L MGB with yellow lid for co-mingled recyclables collected fortnightly; and
- A 240 L MGB with lime green lid for green waste/organics collected fortnightly.

If food waste was included with garden organics, a weekly collection would be required, and the general waste would be collected fortnightly. If this were the case, then provision would have to be made for households with babies in nappies or those requiring a weekly collection for other reasons.

Many Councils operate a two bin collection system similar to the City of Armadale that collects general household waste and recyclables. This Better Bins System aims to add a third bin for green waste and/or organics across WA.

There are two alternatives for the collection of separated organics with the three bin system:

- A fortnightly green waste collection processed either by mulching or windrow composting. This represents 29% of the waste currently collected in the refuse bin.
- A weekly organic collection including green waste, food, soiled paper etc. processed either by windrow or in-vessel composting. This represents 55% by weight of the waste currently collected in the refuse bin.

With both of these alternatives the collection will be increased to allow for the collection of four bins per fortnight compared to the current three bins being collected every fortnight. This is an increase of 33% in collection costs alone, not considering the carbon footprint increase related to the additional collection trucks.

Council considered the implementation of a Three Bin System at its 9 June 2014 meeting (Recommendation Number. T40/6/14) and resolved not to participate in the Three Bin System for the following reasons:

- Financial cost to ratepayers that does not appear to justify the limited environmental and social benefits (high cost, low benefit);
- The three bins present an increased capacity to generate more household waste;
- High incidence of contamination in areas where this system has been implemented;
- A strong likelihood of an oversupply of product due to increased capture of green waste creating a glut in the compost and mulch market;
- High cost to produce an Australian Standard grade product suitable for open markets;
- Potential to spread plant disease/pathogens through under processed mulch;
- Lack of space to store bins on verges in front of properties and on properties;
- Additional truck movement in resident streets, adding to the risk and increasing wear and tear; and
- Increased carbon emissions from additional transport.

The current incentive from State Government is a once off \$30 per bin and the cost of a new bin is currently just under \$40. The additional bins alone will cost the City more than \$300,000. To start the service will require a rollout program, additional waste collection vehicles and additional staff. The start-up cost to the City is estimated between \$1.6m and \$1.7m. Annual operating expenditure is estimated at around \$1m per year.

A major concern to Waste Services is that the Perth Metro area will have an oversupply of green waste and no or low demand for the product amongst the compost companies. Some of the problems experienced by other Councils who have implemented this system, include the contamination of green waste with plastic and other general waste items which makes the product ineligible for organic processing, or unmarketable if processed with the contaminants.

When markets are saturated or the quality of the product is poor it is highly likely that the green waste from this initiative would either end up in landfill or cost the City dearly in paying a third party to take it away.

Until sustainable markets for recycled products have been established, it is recommended that the City refrains from committing to this initiative.

2.1.2 Verge collection service

Verge collections provide residents with the opportunity to throw out unwanted material from their homes, and also reduce the probability of illegal dumping on City property. Residents have the junk and green waste collected from their verge, and have no need to transport the junk to the landfill site. This is a very convenient service for many residents, but especially for those without the transport facilities to take these goods to the landfill.

The City currently provides one verge Junk Collection and two verge Green waste collections to residents per year.

2.1.2.1 Junk collection

The cost of this service, including contractor payments and disposal, has increased over the past years to some \$750,000 per year due to growth and related possible increased take up of the service.

The annual junk collection provides the opportunity for households to dispose of bulky items that are no longer needed, wanted, or are in disrepair. The junk collection normally commences after the summer school holidays and continues for 11 weeks. Residents have **one weekend** before collection commences to place their junk out on the verge. An orange flyer is delivered approximately 10 days prior to collection that outlines the weekend to place junk on the verge and the collection start date.

The time limits for junk on the verge were introduced due to concerns over safety, scavengers spreading junk, and littering. This has significantly reduced the impact of the junk collection on the community.

Metals and whitegoods are collected separately and taken to the Armadale Landfill and Recycling Facility. Refrigerators are degassed by a licensed operator and metals and white goods are recycled. General junk is collected in a different truck and sent to landfill. At least one third of the total weight of junk collected each year is recycled.

Junk collection is closely monitored and residents placing junk on the verge prior to the designated date can incur a litter infringement of \$200.

Tonnages collected vary between the collection areas, with reasons for this variation as follows

- Newer suburbs present less waste. This is simply related to the shorter periods that households have to accumulate junk. It is an established pattern that once households begin to “recycle” white goods and furniture, then the volumes of junk increase considerably in these areas. This pattern of collection is expected to occur in areas currently presenting lesser volumes.
- Current collections in new growth areas have shown a distinct pattern of large bulky packaging materials related to new furniture and appliances, typically demonstrated by the large number of empty TV packaging collected. This is a clear reflection of high volume low tonnage collection from these areas.

- In contrast, the older established areas have a greater proportion of their junk being heavy and more bulky, with metal proportion considerably higher than that experienced in new areas. These therefore reflect a low volume but high tonnage profile.
- Experience has shown that the older areas and rural areas with larger blocks are the recipients of a considerable amount of junk deposited on verges after hours from outside the catchment area.
- The tonnages collected throughout the City clearly demonstrate that there is a need for a junk removal service in some format or other.

2.1.2.2 Green Waste collection

The 2015/16 actual cost of this service was approximately \$640,000 at an approximate cost of \$20 phh pa.

Council collects green waste from residents twice a year. These green waste collections generally fall in the spring and autumn months but can follow through into early summer on occasion. There is a limit of six cubic metres of green waste that is collected per property (approximately three 6 x 4 trailer loads). Any green waste or items that do not qualify for collection will need to be removed from the verge immediately after the council collection.

To allow residents in the hills to prepare their properties for the next bushfire season, green waste collections in the hills area are scheduled to finish as close to summer as possible.

Each household is notified via a green flyer approximately 10 days prior to the commencement of the collection.

The City of Armadale has a varying topography, as well as varied tree coverage between collection areas. Therefore as can be expected, the tonnage collected varies from area to area, for the following reasons:

- The older more mature suburbs present more green waste for collection.
- Suburbs with larger blocks in rural areas will naturally generate greater volumes of green waste.
- Suburbs that have denser populations and high population growth present less green waste.
- New areas do not have established gardens and do not generate much greenwaste.
- New areas have small blocks and far smaller areas in which to plants greenery and their ability to generate waste is diminished.

2.1.2.3 Discussion

In terms of Action 2.4.1.1 of the CBP, Waste Services has been considering alternate means to improve the verge collection of junk and green waste as compared to the current practices. Whilst with an improved form of contract, the verge collection structure will provide a good service, there are a number of alternative means of delivering this same service, but not all have been thoroughly explored at this stage.

After the unsatisfactory performance of the current contractor during the 2016 junk collection it was decided to extend the contract for three months to the end of December 2016. This will provide sufficient time to complete the second green waste collection for 2016 before the fire season. It also allows time to test the market with the revised tender document and appoint a contractor for an initial period of two years with the possibility of 2 x one year extensions, if required.

Tender 21/16 – Provision of Bulk Verge Collection Services was advertised on 10 September 2016 and closes on 18 October 2016 and will be reported to Council in the scheduled November meetings.

Funds have been provided in the 2016/2017 budget to engage an independent Consultant to review the City’s Verge Collection Methodology. This will be conducted in three phases:

- Desktop review of all options;
- Detailed review of three City selected options.
- Council selection of one of the options presented

Stage 1

The first part of the Review will be a Verge Collection Methodology Report which will summarise various Verge Collection options.

The Verge Collection Methodology Report will:

- Outline the alternate options from a desktop audit
- Consider the relative cost of each
- Discuss the respective positives and negatives of each option
- Detail the degree of recycling or materials recovered by each option.

Some of the options that will be considered will include, but are not restricted, to:

- Current system – fixed arrangement provided by contract.
- Services provided through in-house labour and vehicle fleet
- “Fee-for-service – On-demand” option
- “Tip Passes-for-service – On-demand” option

Once assessed departmentally, a report on the broader options will be presented to Council, with a recommendation on three options to be investigated in full detail. It is anticipated that the initial report will be considered by Council in February 2017.

Stage 2

The second stage of this project will be completed following the final selection of the three options for an in-detail study. This would include detailed financial modelling, service reports from other local authorities applying these alternatives and a detailed report outlining the cost of the options available. A recommended preferred option taking these factors into account will subsequently be provided. This report will also include an implementation/mobilisation plan for the recommended option.

A report will be considered by Council in mid-2107, with recommendations for implementation commencing July 2018. This implementation timeframe will only be required for the logistical arrangements to be concluded, should there be a change to the current service methodology.

2.1.3 Tip Passes

The cost of this service is approximately \$850,000 annually.

Ratepayers receive four tip passes with their residential rates notice and one of these can be used for up to four car tyres off rims or for sorted rubbish. In addition to the tip passes attached to rates notices, the City also issues post-rate tip passes to newly built homes once the waste services have been established at the property and the property owner requests the tip passes. Passes are issued pro-rata to the end of the financial year for new property owners (July – September = 4 tip passes; October to December = 3 tip passes; January to March = 2 tip passes; and April to June = 1 tip pass) calculated from the date new waste bins are issued. In addition, passes can be requested when issued passes are not transferred to new property owners of established houses.

The tip pass system was originally implemented to:

- Reduce illegal dumping in parks and reserves - Achieved
- Provide a viable dumping service to residents - Achieved
- Increase recycling - Achieved

These goals have been achieved and are generally accepted by the community and are very well used. This has been to the benefit of the City, with many residents utilising this option for waste disposal. Tip passes also assist residents in maintaining larger blocks in bushfire prone areas.

Tip passes are made available to residents for access to the landfill and recycling facility located at Lot 600 Hopkinson Road, Hilbert, or alternatively Roleystone Green Waste Facility for green waste or for use at bulk bin weekends held three times per year.

One tip pass can be used for:

- *Up to 1.3m³ sorted rubbish*
- *Up to 1.3m³ green waste*
- *The red tyre pass can be used for up to 4 standard tyres off rim at Armadale Landfill and Recycling Facility only*

One tip pass covers 1.3 cubic metres of sorted rubbish or equivalent green waste. An initiative for residents to “Sort ’n Save” was introduced to encourage the separation of waste categories and increase recycling at the Armadale Landfill and Recycling Facility and thus extend the life of the available air space. Therefore, mixed loads, ie. unsorted loads - cannot enter the landfill with tip passes, and a full fee will be charged for mixed loads. Further improvements were made to the tip pass system as developers tried cashing in on the tipping vouchers to improve blocks for their gain at the Ratepayers expense. A two pass maximum was introduced per visit. This covers up to 2.6 cubic metres of sorted waste.

The management of tip passes is an area of constant refinement, and the next phase is to include the barcoding of tip passes, which will address the following features which can be managed on-line:

- Issuing of tip passes (in conjunction with the possible online issuing of rates notices).
- Introduction of bar codes and scanning technology to control tip pass usage.
- Logging of tip passes against specific properties.
- Cancellation of “lost” passes and the reissuing of new passes.
- Sale of additional tip passes.
- Tracking of tip pass usage as a management tool.
- Facilitate the possible use of tip passes by adjoining local authorities’ residents

Most of these aims can be readily achieved through the introduction of a bar coded system for tip passes, which provides for improved control and oversight of tip pass usage.

2.1.3.1 Discussion

It has been suggested that tip passes could be eliminated as not all residents have the ability to take advantage of tip passes and others simply do not have the need. Others in the community argue the opposite; that four tip passes are inadequate and have often been used within a few months of issue. Whatever the argument, the City should consider the following relating to the tip pass system:

- The value of the availability of the tip pass service relating to the stated goals.
- The number of passes issued.
- Discontinuation and possible unintended consequences.
- An “on demand” purchase option.

In the 2016/17 financial year the face value of each tip pass is \$30, averaging the sorted loads and green waste value of purchasing an additional pass. In 2015/16, approximately \$3.2m worth of tip passes were issued (112,000 households @ \$28.50). Of the tip passes issued, only 27% were redeemed, suggesting a real cost of only \$860,000 for tip passes redeemed – or an average use of tip passes of one per household. Data from other Councils who track the use of tip passes suggests that the vast majority of households use fewer than three passes annually. The Waste budget includes a cost for tip passes at a 25% take up rate, which is aligned to the recorded usage above.

Overall the City considers the current system operates extremely well and whilst there are still some detractors in the community, on balance the system achieves its initial aims, is available to all members of the Community and can be utilised or not at resident’s discretion. In general the current system serves the Community well.

2.2 Disposal Services

2.2.1 Roleystone Green Waste Facility

The City operates a satellite waste disposal site at Springdale Road, Roleystone. This site is open on Saturdays and Sundays only for the disposal of household quantities of green waste. Entry to the site is by Tip Pass or cash payment to the gate attendant. The Roleystone disposal facility is managed and controlled by a contractor appointed by the City.

The City also hosts three bulk bin weekends at the Roleystone site per year which allows residents from the Hills to dispose of non-commercial quantities of junk waste material.

The Roleystone facility allows residents in the area to dispose of green waste and junk without having to travel to the Hopkinson Road Landfill and Recycling Facility. The distance between the two facilities is approximately 26 km. In the week following the Monday after the bulk bin weekends, the City's Verge Collection Contractor transports the material to the Hopkinson Road Landfill and Recycling Facility for further processing and disposal.

The contractor is responsible for the following:

- Collect tip passes, fees and monies as the agent of the City.
- Be present at the green waste facility continuously every day that the facility is open to the public.
- Be responsible for the opening of the site gates at the commencement of each day, and locking and securing the site gates at the close of each day's operations, and control vehicle movements within the site.
- Ensure green waste material is deposited in an orderly manner without any contamination, and the provision of plant to push up the green waste into a neat pile as required, and clean the surrounding area and fences of all litter.
- Control the bulk bin weekend that is conducted at the site on Saturday and Sunday, three times per year, including collecting entry fees from customers, recording vehicles on tally sheets and coordinating bulk bin movements.
- Record, complete and hand in all contract/statistical information as required by the contract.

2.2.1.1 Discussion

Summary of the statistics of the visits to Roleystone green-waste facility:

- | | |
|--|----------------|
| ▪ Total number of vehicle movements: | 1,640 per year |
| ▪ Total tonnage of greenwaste collected | 727 tonnes |
| ▪ Average number of <u>vehicle movements per collection day</u> : | 15.77 |
| ▪ Average number of <u>vehicle movements per open hour</u> (8.75hr/d): | 1.8 |

Summary of the statistics for Bulk-bin weekends:

▪ Total number of vehicle movements:	163 per year
▪ Total tonnage of junk collected	40 tonnes
▪ Average number of <u>vehicle movements per collection day</u> :	27.17
▪ Average number of <u>vehicle movements per open hour</u> (8.75hr/d):	3.1

Annual costs of Roleystone activities:

▪ Supervision and plant cost on site	\$43,680
▪ Transport costs for carting bulk bin weekend material to Armadale Landfill and Recycling Facility	\$9,000
▪ Grinding of green waste collected at Roleystone facility	\$67,000

With the following a consideration, and based on a 75% (greenwaste) / 25% (junk) cost split of the contract management costs:

- An average of 16 vehicles per day (greenwaste) and 27 per day (Bulk-bin weekends).
- A cost of greenwaste collection and disposal of \$137.00 per tonne
- A cost of junk collection and disposal of \$498.00 per tonne
- Only 163 residents, or 4.1% of the 4000 catchment households, made use of the three bulk-bin weekends in 2015/16.
- All residents still received the normal junk and two greenwaste collections during the year.

Taking into account the demonstrated low utilisation of the facility; as an additional cost to the general ratepayer, the full service as it currently exists cannot be justified on value for money considerations.

Based on the above, the availability of the Roleystone waste site every weekend cannot be justified, and it is recommended that the opening time be reduced by half. With the very low usage of the bulk bin weekend service, this service also cannot be justified.

2.2.2 Armadale Landfill and Recycling Facility

The City operates the Armadale Landfill and Recycling Facility, which offers a number of recycling and reuse opportunities for free or at a low cost. Ratepayers receive four tip passes with their residential rates notice and, if required, additional tip passes can be purchased from the City's Administration offices and libraries.

Historically, all waste received on site was sent to landfill; however, since approximately 2000 increased effort has been put into separating and recycling portions of the incoming waste stream to divert waste from landfill. Over time, this separation and recycling effort has progressively increased to a stage where significant portions (50%) of the waste stream are now diverted from landfill.

The Landfill and Recycling Facility is currently being used for a wide range of waste management activities including:

- Landfilling
- Green waste processing
- Dismantling of E-waste

- Separation of recyclable materials
- Drop 'n' Shop Reuse Centre

Although the landfill disposal activity has decreased in prominence, it is still the major operation on the site.

2.2.2.1 Department of Environment Regulation (DER)

The Department of Environment Regulation (DER) has responsibility under Part V of the Environmental Protection Act 1986 (EP Act) for the licensing and registration of prescribed premises, the issuing of works approvals, and administration of a range of regulations. DER also monitors and audits compliance with works approvals, licence conditions and regulations, takes enforcement actions as appropriate, and develops and implements Departmental licensing and industry regulation policy.

Under Schedule 1 of the Environmental Protection Act 1986 the City was issued a “Licence for Prescribed Premises” for the following:

LICENCE NUMBER L6964/1997/11

Category Number	Category Description	Category Production Or Design Capacity	Premises Production Or Design Capacity
62	Solid Waste Depot	500 tonnes or more per year	100 000 tonnes per year
64	Class II or III putrescible landfill site	20 tonnes or more per year	100 000 tonnes per year

The above licence has strict requirements regarding the following site operations:

- a) Waste Acceptance and Management
- b) Special Waste Type 1 Management (Asbestos)
- c) Managing of Landfill Activities
- d) Fencing of the landfill
- e) Windblown Waste
- f) Dust Emissions
- g) Burning of Waste
- h) Groundwater Monitoring
- i) Stormwater Management

Notwithstanding the regular site inspections the DER inspectors perform at the Armadale Landfill and Recycling Facility the City also submits annual environmental and compliance reports to the DER.

The WARR Levy Act, provides for a landfill levy to be applied to waste received at metropolitan landfills and metropolitan waste received at landfills outside the metropolitan area. The objectives of the landfill levy are twofold:

- One to act as an economic instrument to reduce waste to landfill by increasing the price of landfill disposal;
- two to generate funds for a range of environmental purposes.

In accordance with the WARR Act, not less than 25% of the forecast levy amount in each year is allocated by the Minister for Environment to the WARR Account. Funds in the WARR Account are used for programs supporting the Waste Strategy through the Business Plan as well as the operations of the Waste Authority and the implementation of the WARR and WARR Levy Acts and associated regulations.

The [*Waste Avoidance and Resource Recovery Levy Amendment Regulations \(No. 2\) 2014*](#) implement stepped increases to the landfill levy over a five-year period. The increases to the levy will have the effect of promoting resource recovery and discouraging the disposal of waste to landfill, which are objectives of the [*Western Australian Waste Strategy*](#), published in March 2012.

The State Government, as part of the 2014/15 State Budget, has announced increases to the landfill levy from 1 January 2015. The increases will help divert the amount of waste being dumped at tips in the metropolitan area and encourage investment in alternative waste treatment options and other government initiatives to support increased recycling. This levy increase is the first since 2010 and brings Western Australia's rates broadly into line with South Australia and Victoria, while still being about half of that in New South Wales. A five-year schedule of levy rates has been announced.

Landfill levy rates

Period	Putrescible Rate/tonne
Current to 31 December 2014	\$28
1 January 2015 to 30 June 2016	\$55
1 July 2016 to 30 June 2017	\$60
1 July 2017 to 30 June 2018	\$65
1 July 2018 to 30 June 2019	\$70
1 July 2019 onwards	\$70

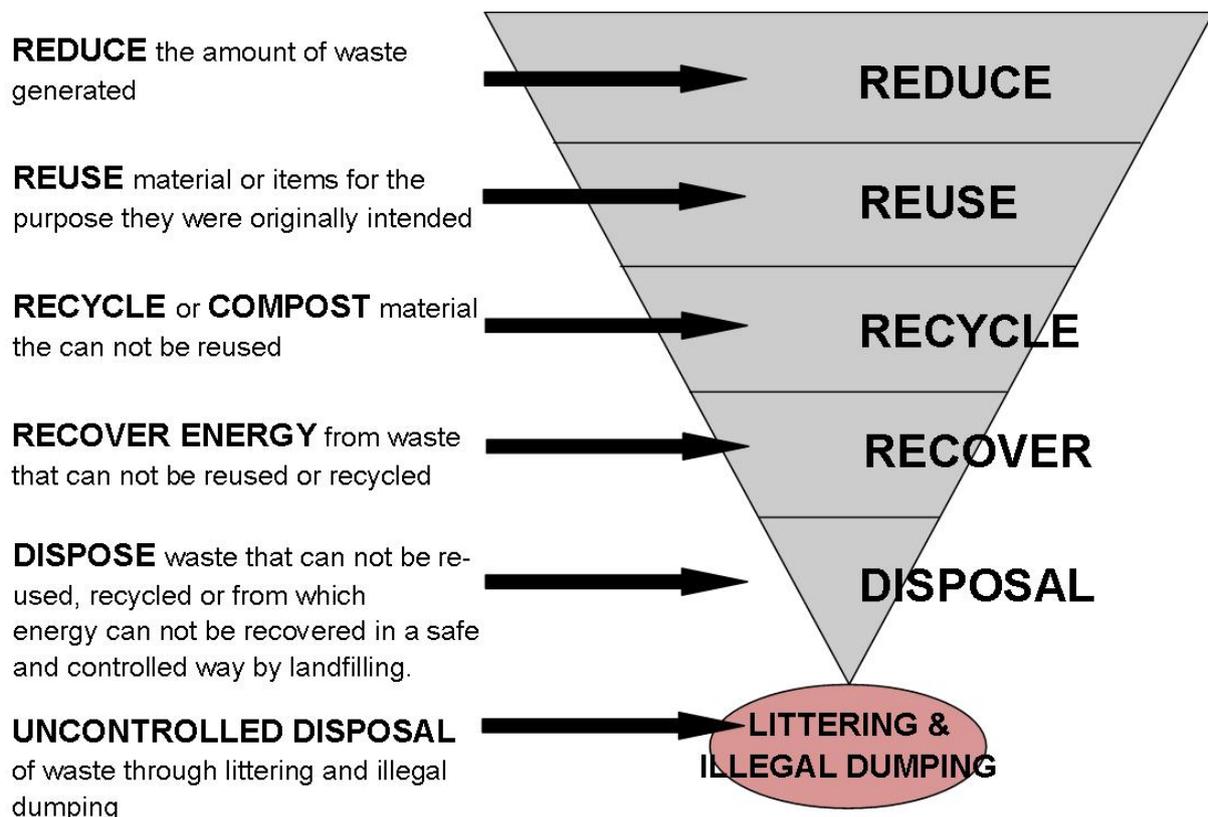
It is anticipated that after July 2019 the Landfill Levy will steadily be increased and could potentially reach similar levels that are seen in New South Wales (NSW), namely \$135.70 per tonne. Landfill Levy at or near levels of \$130 per tonne provides an enormous incentive on firstly the City as a Waste Operator and secondly residents as users that ultimately will have to pay for the privilege to bury waste in landfill.

It is therefore imperative that alternative methods of processing waste are developed and pursued before resorting to landfill. The waste hierarchy ranks waste management options in order of their general environmental desirability.

The waste hierarchy is set out in the Waste Avoidance and Resource Recovery Act 2007 (WARR Act). It shows the different stages of waste and also indicates the most preferred or favourable options and the least preferred or least favourable options as can be seen in the illustration below.

As can be seen in the sections to follow, the City is invested and involved in various aspects of the reuse and recycling options, this is already making a big difference in reducing the volume of waste going into landfill.

Although not part of the original waste hierarchy this report has included uncontrolled disposal of waste as the most undesirable action in waste management today. Littering and illegal dumping is on the increase and the City is on the forefront in the fight against this problem.



2.2.2.2 Reduce

The first preference in the waste hierarchy is to reduce the generation of waste. Reducing waste refers to reducing the amount of waste generated in the first instance. This is generally handled at the State and Federal level with waste levies, taxes, and product stewardship, decreasing the amount of waste material generated. In addition the amount of waste generated is reduced through the creation of opportunities making recycling more feasible. Some examples include the Television and Computer Recycling Scheme, the Landfill Levy and the Australian Packaging Covenant.

The City has limited power to affect waste management outside of its borders but does participate in and provide feedback for items such as reports, investigations and projects at a State and Federal Level. The City also encourages reducing waste via its waste education programs. More detail on waste management education programs can be found in **Section 2.4**.

Activities at the Armadale Landfill can be categorised in the different levels on this waste hierarchy.

The following activities are undertaken at the Armadale Landfill and Recycling Facility.

2.2.2.3 Drop 'n' Shop [Reuse]

The Drop 'n' Shop facility has the primary role of re-using existing goods and material, but also fulfils the role of providing a service to the community in the form of a shop for recycled goods deposited at the landfill facility. While in monetary terms this does not provide a significant income to the City, the primary objective of not landfilling re-usable goods is being achieved.

The important statistics relating to this operation are as follows (where relevant, figures quoted are 2014/2015 figures and rounded to the nearest \$1,000):

Number of Items Sold	35,752
Tonnage Received/Processed	242
Income	
Annual sales (2014/2015)	\$203,000
Waste Disposal Charges	\$19,000
Total	\$222,000
Expenditure	
Salaries	\$224,000
Total	\$224,000

In addition to the above, an amount of \$19,000 is an estimated value of cost avoidance; this being amongst other factors related to the landfill levy avoided through processing the re-usable items through the Drop 'n' Shop facility.

Therefore, in cash terms only and not considering the cost avoidance value, this operation is largely cost neutral. With the success of the Drop 'n' Shop facility, it is suggested that the future operation of this facility is certain, and that these operations will continue.

2.2.2.4 E-Waste processing [Recycle/Recover]

The City entered into a co-regulatory arrangement with an E-Waste recycler in December 2014 as part of the federal government National Television and Computer Recycling Scheme. The scheme set targets for recycling e-waste. Once these targets were met the funding was not renewed and the City was asked to contribute to the costs of recycling. Initially the City received \$50 per tonne of E-waste collected and sent off site to be recycled, but in May 2015 the Product Stewardship agreement with Simms E-Recycling Pty Ltd was amended that the City now pays \$200 per tonne to remove the collected E-waste from the landfill site.

The City's e-Waste processes involve the separation of other electronic goods sent to the landfill for disposal into the various components for resale. These goods are separated into the various recoverable metals and other recyclable items. This is a manual operation and 4 employees are currently employed to provide this function on a part time basis. Markets are willing to pay more for stripped components recovered from discarded items like radios, toasters, hairdryers, kettles, etc.

The important statistics related to this operation are as follows (where relevant figures quoted are 2014/15 figures and rounded to the nearest \$1,000):

Income	
Waste Disposal Charge	\$41,000
Product Sales	\$31,000
Cost Avoidance (Landfill Levy)	\$25,000
Scrap Steel Sales (28.4t)	\$3,000
Total	\$100,000

Expenditure	
Wages	\$114,000
General Expenses	\$4,000
*Television and Computer Removal – 200t Estimated	\$40,000
Total	\$158,000

** Alternatives to this service are being investigated with the aim of reducing these costs.*

It should be noted that the removal of E-waste from landfill improves the quality of the leachate generated by the decomposing waste. E-waste contains many hazardous substances such as lead, cadmium, chromium and benzene which are released when E-waste is deposited into landfill. These hazardous substances dissolve into the leachate generated by the landfill reducing the quality. Removal of these hazardous substances from the landfill and thus the leachate reduces the environmental impact of the landfill and reduces future remediation costs. Given the impact these hazardous substances can have on the environment it would not be surprising if in future a regulation comes into effect where these materials are not able to be buried in landfill, so having established E-waste recycling processes is of significant benefit to the City.

There is not an excessive variation in the costs and incomes in the above, it is envisaged that in future this operation may approach cost neutrality. The outcome however is more important, in that as much as possible of any electronic goods are recycled and value captured, and none is diverted to landfill. This meets the higher order on the waste hierarchy, and a good environmental outcome is achieved. The most important environmental outcome is the removal of heavy metals from the landfill.

With the above success in e-Waste recycling and recovery, it is the intention to investigate the possibility of expanding the operation to 5 days per week which will provide security of tenure to the existing casual staff, as well as establish the City as a leader in this field.

2.2.2.5 Weighbridge

The current weighbridge is old and has reached the end of its useful life. The local suppliers/agents for the equipment have confirmed that spare parts are becoming more difficult to source and that the replacement of the mechanical elements of the weighbridge is imminent. There are also a number of cracks appearing in the concrete footing/foundation of the weighbridge. Planning is therefore underway to replace the existing weighbridge and office with a new weighbridge and reception facility that will address contemporary requirements for such a facility.

2.2.2.6 Light vehicle drop-off and transfer area [Recycle]

The City is currently in the process of providing a new light vehicle drop-off and transfer facility where light vehicles with trailers can drop off waste and recyclables. At full capacity the new facility will be able to accommodate approximately 40 vehicles in a safe manner, from where material can be deposited into the recycling bins. It is anticipated that this improved facility will provide for a more efficient operation, as well as for greater recycling rates than at present.

2.2.2.7 Recycling

The Armadale Landfill and Recycling Facility provides a method for ratepayers to save and accepts items at no charge to ratepayers provided they only take recyclable items in a single load to the Armadale Landfill and Recycling Facility. Many of these recycling activities relate to the recycling and management of Household Hazardous Waste, and in terms of Action 2.4.3.2 of the CBP, it is planned to further improve and expand this service, to include construction and demolition (C&D) as well as commercial and industrial (C&I) recycling options, as the site Development Plan is finalised within the next two years.

Recyclable items accepted at no charge include:

- Whitegoods, eg. fridges, freezers and washing machines.
- Scrap metal including small amounts of wire, rinsed steel and aluminum cans.
- Car batteries.
- Cardboard, packing boxes, magazines, newspapers (must be flattened and clean).
- Motor oil (max 20 litres).

- Glass bottles.
- Small household appliances (e.g. kettles, toasters, hairdryers, stereos).
- Green Waste.

2.2.2.8 Landfill process [Disposal]

The landfill has been receiving waste since 1975. The vast majority of waste accepted at the facility has and continues to be domestic putrescible waste collected by the City of Armadale and domestic bulk waste delivered to the facility by residents of the City and neighbouring areas. To a lesser degree, there has been some commercial waste accepted. With the population of the City growing at an estimated 5% per annum it is clear that continued improvement in recycling rates are crucial for the future sustainability of waste management.

Without the Alternative Waste Treatment plant (AWT) in Kwinana planned for commissioning in 2019/20, the landfill site will be filled up within 12-15 years. With the AWT and the waste that will be diverted to this plant, the anticipated remaining lifespan of the landfill site is modelled for up to 70 years. Owning a landfill will become more valuable to the City as landfills in the metro area start filling up and closing down in the next 5 – 10 years. Transport costs to landfill outside the metro then begin to form the greatest portion of waste disposal costs, and can become crippling. It is therefore imperative that the City guard its interest in the Armadale Landfill for the long term benefit of Armadale residents.

2.2.2.9 Discussion

A Site Optimisation Plan was completed in 2007. This document reviewed site activities and operational methodologies in relation with the then DEC licence conditions. With the development and changes over the last five years in legislation, the change of focus when the regulator changed from DEC to DER and the subsequent policy changes impacting on operations and costs, the optimisation plan has become outdated in key areas. This Plan also does not provide sufficient detail regarding the long term future use of the Facility. This aspect was identified in the CBP Action 2.4.3. Improve Waste Disposal Practices, but significant improvements are anticipated to be able to be achieved, and this will form part of the new Development Plan to be developed over the next year, anticipated for completion in 2018.

Funds were allocated in the current financial year (2016/17) for the conversion of the Optimisation Plan into a new Development Plan that will not only consider current activities on site, but also include future planning regarding additional recycling activities, resource recovery, landfill levy trends and post closure management plans. The document will also contain a future capital program with a detailed 5 year capital expenditure forecast.

A brief is being prepared to appoint consultants to research, develop and compile the new Armadale Landfill and Recycling Facility Development Plan that will be tabled before Council once it is finalised. The expected timeframe for the completion of this work is approximately 24 months.

2.3 Special Services

2.3.1 Special Bin Services

Special Bin Service – Residential Disability

The City provides a special bin service to residents who have difficulty presenting their bin(s) for collection. To obtain this service, residents request the special service and provide a medical certificate. The service is only provided to those living without an able bodied person to present the bins for collection. At registered properties, the waste collection driver must retrieve the bins to empty them and return them to the property. On recycling weeks, the first driver to arrive at the premises takes out the bins and the last driver returns them. There are currently 13 registered special services.

There is no additional charge for this service.

Special Bin Service – Commercial/Non-disability

In cases where truck drivers are required to enter premises to retrieve bins and empty them, an additional charge is levied. There is currently only one commercial site using this service.

Special Event bins

The City and Community Groups routinely host events throughout the year such as Australia Day and the Kelmscott Show. These events generate refuse in excess of what the permanent waste infrastructure of the area can support, requiring additional bins to be delivered, serviced, and removed by Waste Services.

These bins are delivered and collected at a fee which partially covers the cost of two staff and a delivery vehicle to move the bins from the Armadale Landfill and Recycling Facility to the event location. A separate charge is levied for the servicing of such bins. If the event organisers do not clean the bins before they are collected, then an additional fee is charged for this additional service. This service is used often and in general event organisers are cooperating to meet the requirements.

2.4 Education and Compliance

Education and Compliance are two very important functions of Waste Services. The education function provides Residents and other users of services with information on how to best use the services including avoiding the generation of waste and how to maximise recycling. Compliance ensures that the essential requirements of waste services are met to ensure that waste is handled in a sanitary manner and does not impact the amenity of the City.

The City has a number of avenues to provide education to the community. Through partnerships with the Rivers Regional Council (RRC), a school education component is provided through the Cleanaway Recycling Education Program and also through the promotion of Waste Wise Schools. The Waste Wise Schools program is a Department of Environment Regulation initiative that operates in the Perth Metropolitan Area targeting primary school students. In addition a number of other activities are run such as an annual waste related poster competition that is developed into a calendar, along with print advertorials in the local papers around relevant issues such as recycling and illegal dumping.

The City also provides an education and awareness service to inform the community (including residents and commercial operators) about the waste services provided, as well as topical issues such as illegal dumping and waste minimisation. Avenues for communication include the City's website, City Views, media releases, advertorials, flyers and brochures, attending community events and utilises other opportunities to discuss waste minimisation and recycling with a captured audience. Face to face interactions also occur whenever customers use the provided services or contact the City. Waste Services also has some capacity for staff to attend one on one sessions with customers to assist them with their waste management.

In 2012 Waste Services identified the need for a Resident Liaison Officer (RLO) that could assist with:

- Conducting bin audits at residences and industrial areas and identify multiple bin usage.
- Liaising with residents/business owners explaining recycling and what can and cannot be taken to landfill as well as the options at the Drop 'n' Shop.
- Liaising with Waste Drivers and contractors concerning customer requests, as and when required.
- Conducting Litter/illegal dumping investigations.
- Coordinating clean-up of litter/illegal dumping with relevant personnel.
- Inspecting the placement of junk and green waste during verge collections.
- Liaising with residents, contractors and Waste Services staff.
- Issuing clean up notices if required.
- Issuing notices to decontaminate recycling bins if required.
- Removing excess/multiple or illegal bins from properties if required.
- Issuing infringement notices regarding Waste Services activities as and when required.
- Passing on clean-up costs to residents as and when required.

Records indicate that the Resident Liaison Officer has made the following gains through the bin audit role and infringements, expressed as an average per annum from March 2013 August 2015:

▪ Reduction of Bins Collected but Previously not Billed	321
▪ Consequent Reduction in Operational/Processing Costs	\$78,000
▪ Increase in Additional Second Bins Promoted	96
▪ Increased Income from Additional Second Bins	\$21,000
▪ Infringements (all types)	\$26,000

The illegal dumping investigation and liaison, in conjunction with the education of offenders, is a time consuming activity. The benefits are not always realised in actual cost savings directly, but in a general reduction in illegal dumping removal cost (cost avoidance), reflected in the reduction in the willingness in the community to dump illegally.

The function of bin audits relating to illegal bins, and the demand for a second service is only serving a small proportion of the actual need in the field. With the tremendous success demonstrated to date, the need for additional capacity is clear, and will result in further cost avoidance.

Further to the above, the need for a second RLO was identified and is currently being trialled by Waste Services.

Enforcement goes hand-in-hand with education and two Resident Liaison Officers are currently providing support to the community around issues with bins, recycling contamination, verge obstructions, verge collections and illegal dumping. The Officers aims are to make the community aware of these issues whilst also enforcing State and Local Laws.

2.4.1 Illegal Dumping and Litter

The City takes the illegal dumping of rubbish seriously as this impacts on the environment, safety and enjoyment of the community and the aesthetics of an area. The cost of illegal dumping to the City is estimated to be:

- \$380,000 in disposal costs
- \$160,000 in collection costs

The cost of disposal is increasing for a variety of reasons, but mainly due to increases in the Landfill Levy causing more material to be dumped illegally. Of a major concern is the dumping of asbestos becoming more prevalent, despite this not attracting the landfill levy. Commercial loads of inert material are also becoming more widespread with the Waste Management Association of Australia estimating that black market waste disposal industry is valued at more than the legal waste disposal industry. Waste Services takes an active role in discouraging littering and illegal dumping, investigating illegal dumping and clearing rubbish.

Illegal dumping is investigated by the City and fines are issued when sufficient evidence is found. Annually, approximately \$17,000 per annum of income is generated from issuing

infringements for illegal dumping only. Further to this income, it is estimated that \$116,000 expenditure per annum is avoided by enforcing illegal dumping laws. Working in partnership with other bodies such as LandCorp, Department of Environment and Regulation (DER), Department of Parks and Wildlife (DPAW), City of Armadale Ranger Services, etc. the City aims to deter individuals and businesses from depositing rubbish on vacant land, in bushland, along roads, and anywhere that rubbish is not welcome.

The two RLOs are responsible for patrolling illegal dumping or littering hotspots, investigating incidences of littering/illegal dumping and issuing infringements where evidence supports this requirement. Signage and temporary surveillance cameras are also being installed at strategic locations with varying success.

Rivers Regional Council is assisting its member Councils by creating an Illegal Dumping Strategic Plan for the region. To date, three meetings and a workshop have been held to assist in developing a coordinated approach to illegal dumping, highlighting successful programs and activities and exploring external funding opportunities. Member Councils have provided RRC with data on illegal dumping and litter in their areas which will be used to highlight the enormity of the situation. Once the Illegal Dumping Strategic Plan is finalised, it will be presented to the Rivers Regional Council Technical Advisory Committee for approval.

2.4.2 Discussion

Illegal dumping in the City of Armadale is a growing problem and the City will continue to:

- Work with other bodies- LandCorp, Department of Planning, Water Corporation, Department of Parks and Wildlife, Department of Environment Regulation, etc
- Work with RRC through participation in workshops and similar activities.
- Assist in the development of an Illegal dumping strategy with RRC
- Seek solutions in developing and promoting the best ways to collect illegally dumped waste

2.5 Waste Administration

Waste Administration comprising of Senior Waste Management, Waste Call Centre, Waste Technical Support, Waste Admin Support and Waste Resident Liaison Officers are all located on the 3rd floor of Orchard House and form part of the Technical Services Directorate.

Senior Waste Management

Both the Manager of Waste Services and Coordinator Waste Services are located in Orchard House from where the service is managed.

Waste Call Centre

Waste calls normally come through the City's Customer Service department and two administration officers at Waste Services. The City's Customer Service department is equipped to answer and deal with Level 1 calls – basic enquiries. More complex and the more difficult calls are dealt with by the administration officers within Waste Services.

Technical Support

The Waste Technical Support Officer deals with an array of different issues which includes statistical record keeping, compliance reports to DER, landfill levy reports, Waste Education, social media (Facebook updates), communications, website updates, etc.

Waste Admin Support

When not taking telephone calls regarding Waste Services, the Admin Support staff take care of the administrative functions relating to procurement (quotations, tenders, purchase orders and invoice administration), report writing, financial reporting, and general correspondence.

2.5.1 Discussion

As discussed elsewhere in this report the permanent appointment of the second RLO will be considered early 2017 when the benefits of a second RLO will be evaluated.

The current staff complement at “Waste HQ” is considered to be sufficient for the functions and workload. Future consideration will be given for a second Technical Support officer with an engineering background to assist with engineering challenges within Waste Services.

No further recommendations are being proposed regarding the Waste Services Head Office component and its functions.

3 Waste Charge Comparison

	City of Armadale	City of Bayswater	City of Canning	Town of Claremont	City of Cockburn	City of Gosnells	City of Joondalup	Shire of Serpentine Jarrahdale
Annual Waste Charge	\$363	\$331	\$361	\$399	*\$458	\$303	\$346	\$350
Weekly General Waste	✓	✓	✓	✓	✓	✓	✓	✓
Fortnightly Recycling bin	✓	✓	✓	✓	✓	✓	✓	✓
Green Waste(3 rd) Bin		✓			✓			
Verge Junk Collection	✓	✓	✓	✓	✓	✓	✓	✓
Verge Green Waste	✓	✓	✓	✓	✓	✓	✓	✓
Own Landfill	✓				✓			
Issue Tip Passes	✓	✓		✓	✓		✓	
No. of tip passes	4	3		2	6		4	
“Tip Shop”	✓				✓			
Free recycling drop off	✓							
Resident Liaison officers	✓							

*2015/16

From the comparison it is clear that there is a relationship between the number of services (level of service) and the annual charge that residents have to pay for these services. The City of Gosnells, for instance, charges less for Waste Services than the City of Armadale, but then the Gosnells residents receive a lower level of service.

Others like the Shire of Serpentine Jarrahdale, City of Joondalup, City of Canning and the City of Bayswater are more comparable on charge, but still do not provide the full suite of services the City of Armadale does.

The City of Cockburn and Town of Claremont charge considerably more than the City of Armadale.

On face value of a desk top comparison it can be seen that the City of Armadale provides a high level of service at a reasonable charge when compared with the other local governments in the area.

4 Rivers Regional Council

The Rivers Regional Council (RRC) was established in 2001 under the Local Government Act 1995, formerly named South East Metropolitan Regional Council (SEMRC).

The main function of the Council is to work towards waste management initiatives that build on economies of scale for the member councils. Originally established between the Cities of Armadale, Gosnells and South Perth, the Council later grew to include the City of Mandurah, Shire of Murray, and Shire of Serpentine-Jarrahdale. With this the SEMRC changed its name to RRC.

The RRC has responsibility for planning long-term waste management outcomes and lobbying on behalf of member Councils in the general field of waste management. Education is also part of the RRC programs and includes the Cleanaway School education program, the Waste Wise Schools partnership and advertising and marketing.

The main function was however to establish an Alternate Waste Treatment (AWT) facility for member Councils. In this respect, RRC awarded a tender for the establishment of an AWT in Kwinana to service all the needs for waste disposal of member councils for the next 20 years. While the tender has been awarded, the final financial closure documents have not been signed, and the latest information is that these will be signed by the end of February 2017.

In terms of the tender, the AWT facility will accept waste at a reasonable cost (details undisclosed in this report due to confidentiality considerations as the contract is at this stage not yet signed by the financial partners). The tendered rates compare very favourably with current commercial landfill costs, and costs for disposal at other metro AWT facilities.

Once constructed, the AWT facility will provide long term disposal security for all member councils, at a cost which is well below the current disposal charge at landfill, and which is expected to provide even greater savings to members as the expected increases in the landfill levy are implemented.

As considered in the CBP Action 2.4.3.1, once the AWT contract has been fully signed off, a transport study will be commenced to service the contract requirements. This is anticipated to be completed in 2017/18, but may be need to be delayed should the contract finalisation be delayed.

5 Recommendations

In consideration of the above it is recommended that Council:

1. Note the content of this Waste Services Activity Report.
2. Endorse the following actions:
 - a) The introduction of 06h00 morning starts to waste collection, under the conditions of an approved Noise Management Plan.
 - b) The trialling of household and recycling waste collections on one side of the street in appropriate areas to promote efficiencies.
 - c) The cancellation of the Bulk-bin weekend service at Roleystone as from 1 January 2017
 - d) The reduction of the opening hours of the Roleystone green-waste facility, which are to be limited to the first and third weekend of every month, on cessation of the current site management contract, on 12 September 2017.
3. Note the following operational activities/services currently in planning or currently underway regarding improvements to the Waste Service range of activities:
 - a) The continuation with the household waste recyclable material collection services through a private sector contractor, and the intention to advertise the recycling collection tender for a five year period with two periods of one year extensions, by the end of 2016.
 - b) The continuation of the household waste collection service through in-house resources.
 - c) A report advising of the recommended tenderer for the provision of the City's bulk waste collection services will be presented to Council for consideration in November 2016
 - d) The option of taking up the State Governments offer of participating in the three bin collection system not be exercised.
 - e) The application of GPS technology and route optimisation software to waste collection vehicles for the purpose of increased operational efficiencies and improved management control.
 - f) The intention to purchase a rear loaded compactor waste collection vehicle to service multi-unit developments and litter bins on streets and in parks, pending of a feasibility study.
 - g) The retention of the current tip pass system in the current format.

- h) The unchanged continuation of the following operations at the Hopkinson Rd Facility:
 - Landfill
 - Drop 'n' Shop
 - Recycling
 - i) The expansion the e-Waste dismantling operation from a 2 day per week operation to 5 days per week, pending the outcome of the proposed feasibility study.
4. Note the following reports on specific subjects as detailed below, to be submitted to Council for consideration as they become available:
- a. The various range of options for verge collections of greenwaste and junk waste to be submitted early in 2017, for the selection of the three most appropriate options for further detailed consideration.
 - b. A further report providing a detailed analysis of the three above selected options, with a recommendation regarding a final option for implementation, for consideration in mid-2017.
 - c. A revised and updated long term Development Plan for the Landfill and Recycling Facility on Hopkinson Road, detailing legislative requirements and future operational development requirements, with a broad assessment of long term financial implications.