waste and resource recovery strategy 2013–2023
Acronyms

ABS  Australian Bureau of Statistics
ACT  Australian Capital Territory
APC  A.Prince Consulting
AWT  advanced waste treatment
CDS  container deposit scheme
C&I  commercial and industrial
C&D  construction and demolition
DHL  DHL Express
DWMC  domestic waste management charge
EFW  Energy from Waste
EOI  Expression of Interest
E-waste  electronic waste
EPA  Environmental Protection Authority
EPR  extended producer responsibility
ESD  ecological sustainable development
KAB  Keep Australia Beautiful
LGA  Local Government Association

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Acronyms
MBT  mechanical biological treatment
MGB  mobile garbage bin
MOU  Memorandum of Understanding
MRF  materials recovery facility
MSW  municipal solid waste
NSW  New South Wales
POEO  Protection of the Environment and Operations
QCC  Queanbeyan City Council
RFID  Radio Frequency Identification Device
RID  Regional Illegal Dumping
SERRG  South Eastern Resource Recovery Group
SEROC  South East Regional Organisation of Councils
SSROC  Southern Sydney Regional Organisation of Councils
STP  sewerage treatment plant
WAMI  Waste Minimisation Centre
WARR  waste avoidance and resource recovery

Abbreviations
CO₂e  carbon dioxide equivalent
Hhld  household
kg  kilogram
L  litres
tpa  tonnes per annum t – tonnes

Definitions
A list of definitions is provided in Appendix A.
executive summary
Queanbeyan City Council adopted its first waste management strategy more than 10 years ago, in July 1999. As a result of that strategy, a number of successful initiatives were introduced, including the fortnightly garden waste service, expansion of the Waste Minimisation Centre (WAMI) in Lorn Road, reduction in garbage bin size to 140L, provision of a bi-annual on-call kerbside clean-up for single dwellings and the provision of a scheduled bi-annual multi-unit and rural clean-up. These initiatives are now cornerstones of the current waste management programs.

Council has endorsed the NSW State Government targets of diverting 66% of municipal solid waste (MSW) from landfill by 2014. Council has a well-established three-bin system for garbage, recycling and garden waste, which is well used by the community and currently diverts 40% of all waste generated by households. An additional 10% diversion is achieved through the recycling activities at the Waste Minimisation Centre (WAMI). However, Council is short of achieving the current target and the EPA’s Strategic Plan 2013–2016 states a waste diversion from landfill target for NSW of 75% by 2021–22.
A number of federal and state government policies and programs will assist Council and the broader community contribute to waste reduction, including Extended Producer Responsibility schemes for e-waste and other priority materials. In addition, the carbon tax and diminishing landfill space are driving up landfill disposal costs, encouraging greater source separation in an effort to contain escalating costs, while creating more incentive for councils to find alternatives to landfill.

As well as finding an alternative to landfill, Council needs to maximise waste diversion in a cost-effective and sustainable way. Additional diversion of waste from landfill will only occur through a combination of policies and programs. The development of this Waste and Resource Recovery Strategy sets the context, targets and actions to deliver improved waste management outcomes for Queanbeyan City Council and its community for the next decade.
Clearly, the next significant change in the waste management evolution will be a requirement for the community to reduce the amount of food waste sent to landfill. Food waste currently represents 42% of the general waste bin and 49% when combined with other organics present in the residual waste bin. Council will need to promote a range of on-site and off-site organic waste management options, including providing all households with a current garden waste service with a kitchen caddy, bio-bags and extensive educational materials, seen as best practice, to encourage food waste separation.

Council will need to prepare a business plan with cost–benefit analysis to determine the most appropriate, viable and sustainable processing option of the combined food and garden waste service. The current management of garden waste is unsuitable for this future program and requires a decision as to whether Council or the private sector are better placed to process and market the end product. Council currently contracts with the private sector to process the recyclables collected from the kerbside bins as this is a highly specialised activity and requires knowledge of end markets to provide a revenue stream to maintain low processing fees. This same situation could apply to the kerbside collected organics.
The strategy contains a range of initiatives and opportunities with actions developed based on the waste hierarchy of encouraging waste avoidance, reduction, reuse and recycling prior to processing and disposing of waste, as well as being complimentary to national, state, regional and local frameworks. As a priority, Council needs to:

1. Recover more recycling through increased community awareness;
2. Reduce the current high levels of contamination in the recycling stream;
3. Introduce a food waste collection service to households with an existing garden waste service;
4. Provide training in home composting and worm farming, supported by subsidised compost bins and worm farms for those householders who seek to manage organics onsite;
5. Investigate alternative processing options for both the existing garden waste, future garden and food waste, bio-solids and the residual waste stream;
6. Retain the present bulky waste collection;
7. Reconfigure the existing WAMI to allow for recovery of a greater range of low toxic problem wastes and other materials identified by the community; and
8. Apply for funding under the Waste Less Recycle More funding package to implement the food waste service and to expand the current drop off facilities at the WAMI for low toxic problem wastes.
The actions in this strategy are based on delivering the most politically acceptable, socially and environmentally responsible and commercially viable outcomes for the next decade while meeting the current and future waste-diversion targets.

From a baseline of 41% in 2013, this strategy seeks to achieve the following targets for the kerbside waste program:

- 45% by 2015 through greater capture of recyclables;
- 64% by 2016, following the introduction of the food waste program; and
- >70% by 2023 by processing the general waste bin through an Advanced Waste Treatment facility, established by either the ACT Government or the private sector.

Seek to reduce the contamination rate in the recycling stream from a baseline of 20% to:

- 10% by 2016; and
- 7% by 2023.

The above targets exclude material delivered to the WAMI, as no weighbridge is provided nor is there any accurate method of determining the amount of waste delivered directly to the ACT landfill from the Queanbeyan community.

Achieving these targets relies on the commitment of all stakeholders, including Council, residents, local businesses and visitors. The whole community has a role to play.

The opportunities for continuous improvement to Council’s waste services have been addressed in a series of 87 interrelated and co-dependent recommendations and grouped into 74 specific actions (see “Action plan 2013–2023” on page 70) that will form the future works program for Council.
Recommendations

Recycling

1. Improve recycling recovery through increased awareness/education programs.
2. Develop and/or implement a recycling bin contamination policy.
3. Where habitual offenders continually contaminate recycling, revoke the recycling service.
4. Council, in conjunction with the contractor, engage a bin auditor to routinely inspect every recycling bin prior to collection on multiple occasions to identify and allow targeted communication to offending households.
5. Where additional recycling bin capacity is required, Council to provide as an option a 360L recycling bin at minimal additional charge.
6. In preparing for the next waste collection contract, specify that the collection fleet must be capable of collecting bins ranging 240–360L for recycling.
Recycling processing

7. Maintain the current contractual arrangements with ACT NOWaste and Remondis in relation to acceptance and processing of all recyclables generated by Council.

Garden waste

8. The existing 240L garden waste bin should remain the only size option due to potential weight issues with bin usage.

9. Where additional garden bin capacity is required, Council provide additional 240L bin on a cost recovery basis.

Garden waste processing

10. That Council seek expressions of interest from interested parties to:
    • process the existing stockpile of 7,000–10,000m³ of garden waste into grades suitable for sale;
    • receive and process the estimated 3,000 tonnes garden organics delivered to the WAMI; and
    • receive and process the anticipated 1,800 tonnes of garden waste arising from the garden organics kerbside collection.

11. That the above information informs the development of a comprehensive business plan to consider the full range of options, including cost–benefit analysis and risk profile in relation to:
    a) options for collection, transport of the self-hauled loads; and
    b) processing and marketing of the finished product from both the self-hauled and existing garden waste collection.

12. As a matter of priority, Council should utilise the information gained from the EOI process above to inform the development of a comprehensive business plan, including a full cost and risk assessment.

13. Council promote the sale of mulch and matured processed green waste to the community.
Food waste

14. As a matter of priority, Council undertake the development of a comprehensive business plan including a full cost–benefit analysis and risk profile in relation to the exploring the options for collection, transport, processing and marketing of the finished product from the future food and garden waste collection.

15. Promote avoidance of food waste by community outreach in addition to supporting the passive “Love Food Hate Waste” program initiative of the NSW Government.

16. Conduct a trial to ascertain the take-up rate, contamination rates and issues associated with food/green waste collection and services.

17. Introduce a source-separated food waste collection service as part of the 240L garden waste collection service for all households with an existing garden waste bin.

18. Provide each householder with a new 240L mobile garbage bin, kitchen caddy and on-going supply of bio-bags.

19. Consider both local and regional opportunities when applying for the state government ‘Waste Less Recycle More’ grant funding to offset the cost of implementation based on $35/household and $20,000 for waste audit.

20. Council offer an ‘opt in’ service for medium-density housing where the bodies corporate nominate their building to be part of the program.

21. Council review the garden/food program including conducting a domestic waste audit to quantify participation, contamination, diversion, recovery and carbon reduction impact. Residents should be surveyed regarding collection frequency to determine if changes should be introduced to the garden/food and general waste bins.

22. That Council seek expressions of interest from interested parties to receive and process the estimated 3,500 tonnes of combined food and garden waste arising from the new garden organics kerbside collection service to be introduced in 2015.
Rural waste services

23. Council should offer the rural community:
   • an optional 240L yellow lid recycling bin and 240L red lid garbage service serviced on alternate fortnights; or
   • an optional recycling service only for those properties with alternative waste arrangements.

24. That the recycling drop-off facility at Fernleigh Park be closed following introduction of the above services.

General waste

25. Council offer the community an 80L general waste bin option for low waste generators for a reduced waste charge.

26. In preparing for the next waste collection contract, Council needs to specify that the collection fleet must be capable of collecting bins ranging from 80–240L for general waste.

27. Council specify that fuel efficient vehicles would be favourably considered in the next waste collection contract.

General waste disposal

28. That Council release an EOI to interested parties in relation to both the receipt and processing of residual waste arising from Council kerbside general waste collections.

Bin configuration and technology

29. Council communicate to the community the range of waste, recycling and garden organics bin sizes and fee options available.

30. Council, in preparing for the next contract, require the provision of Radio Frequency Identification Device (RFID) tags on all new bins and the appropriate hardware and software for monitoring by both Council and the contactor. Maintenance of the database to be agreed between the parties.
31. Council needs to undertake improved promotion of the Waste Minimisation Centre location, services and cost in addition to implementing improved road signage.

32. Investigate reconfiguration of the existing WAMI in the short-term to offer an expanded drop-off area for low toxic problem wastes as defined by the NSW EPA, including gas bottles/fire extinguishers, paint, lead acid batteries, fluorescent tubes, smoke detectors and used motor oil.

33. Council should apply to the NSW EPA for grant funding as part of ‘Waste Less Recycle More’ funding initiative to provide new and upgraded existing drop-off facilities for low toxic problematic waste including lead acid batteries, gas bottles, paint, fluorescent tubes and smoke detectors.

34. Council enter into negotiations with SEROC/SERRG and DHL in relation to providing a permanent e-waste (computer, peripherals and televisions) collection point at the WAMI.

35. Council support SEROC/SERRG to coordinate a regional tender for the collection and processing of mattresses.

36. Council provide expanded facilities at the WAMI for the collection and storage of mobile phones, toner cartridges, scrap metal, used chemicals, unwanted but reusable household items, clothing and textiles.

37. That as part of the refurbishment of the existing WAMI and/or construction of a new facility a weighbridge be installed for accurate monitoring of waste flows.
38. As part of the reconfiguration of the existing WAMI that due consideration be given to finding an alternate location for the operation of the Men’s Shed until such times as a Master Plan and new site are developed when co-location could be complementary if the Men’s Shed was involved in the repair and maintenance of the donated unwanted household goods.

39. That a DrumMuster compound be established for used plastic agricultural containers that have been triple rinsed and free from liquid residual.

40. Council in conjunction with LGA, SEROC and SERRG lobby the Federal Government to extend the EPR program to all e-waste, mattresses, gas bottles, fire extinguishers, paint, batteries and smoke detectors.

41. Council support and promote the introduction of a regional mattress-recycling program.

42. Conduct a feasibility study into the various operating models in other locations to assist in determining the preferred structure to suit Council’s risk profile in relation to the future operation of a reuse shop.

43. Engage with local charities and undertake an expression of interest with the local community to determine the level of interest in operation of a reuse shop at a Council-provided facility as social enterprise.

44. For the longer term, Council needs to develop a Master Plan for an integrated larger site that can accommodate all recycling/reuse activities in the same location. It may also incorporate the proposed Sustainability Hub and Men’s Shed.
**Bulky waste**

45. Maintain the twice per annum bulky waste service for single households in the urban areas with additional services on a fee for service basis.

46. Maintain the service in medium-density areas of two collections per year in March and September.

47. Maintain the current service level to rural community of two scheduled services per year.

48. Council promote trash-and-treasure days or ‘second-hand Saturday/Sunday’ to encourage reuse, with the clean-up service booked immediately following the activity on request.

49. Continue to review opportunities to maximise diversion of hard waste from landfill.

**Bio-solids**

50. That Council seek expression of interest (EOI) from interested parties to receive and process from the Queanbeyan Council Sewerage Treatment Plant:
   - 4,000 tonnes stockpile of bio-solids; and
   - 850 tonnes per annum of bio-solids.

51. That the information gained from the above EOI be used to inform a business plan for the on-going management of bio-solids as part of the future management of organics.
Litter management

52. Council continue to support and promote litter reduction initiatives such as Clean up Australia Day and Don’t be a Tosser campaign.

53. Council in conjunction with the LGA, SEROC and SERRG lobby for the banning of plastic shopping bags in favour of reusable bags and that all supermarkets only use coin operated trolleys to reduce community misuse and dumping.

54. That Council encourage the proprietors of Wanniassa Street fast food outlets to institute more intensive litter campaigns in the wider vicinity of their own outlets.

Container Deposit Scheme (CDS)

55. Council in conjunction with LGA, SEROC and SERRG should monitor developments in relation to the implementation of a national Container Deposit Scheme.
Illegal dumping

56. Council contact the ACT Government, neighbouring councils and appropriate authorities to ascertain the level of interest in working cooperatively as a dedicated group of officers in tackling illegal dumping and pursuing offenders.

57. Council should maintain a database and map of illegal dumping incidents to inform appropriate interventions for managing and reducing it and to identify incidences of repeat illegal dumping activity.

58. Council should seek funding from the Waste Less Recycle More funding package for a waste compliance officer.

59. Install motion activated cameras in target ‘hot spots’ in an effort to reduce activity.

60. Encourage more dialogue between real estate agents/environmental health officers and rangers in the quest to better understand and respond to incidents.

61. Provide real estate agents and strata managers with information packs for new tenancies and home-owners so they are aware of the services and penalties for non-compliance in particular illegal dumping.

62. Undertake a media campaign to raise awareness of the issue of dumping and the penalties and enforcement activities of Council rangers.
Away from home recycling

63. Expand the recycling stations to include more shopping precincts, pool and sports fields and parks.

64. Offer recycling opportunities at major sporting events and activities.

65. Apply waste-wise event management to all events organised at Council venues.

66. Council consider the purchase of specific bins, hoods and signage to clearly differentiate what products go where for use at events and sporting functions.
Education

67. Employ a full-time waste education officer or project officer to assist with community education.

68. Continue to engage Keep Australia Beautiful (KAB) to deliver the annual school education program to all public and private schools within the council area.

69. Market test all graphics and educational material to gauge community understanding prior to release.

70. Continue to provide education in a range of mediums for all ages and demographics.

71. Develop bin stickers for placement on either the outside of all bin lids or front of bin.

72. Develop, promote and implement training opportunities in organics management including low waste gardening, composting and worm farming.

73. Provide subsidised worm farms and compost bins for those households who participate in the above training and seeking to manage organics onsite.

74. Offer the broader community worm farms and compost bins at cost.

75. Promote the State Government ‘Love Food Hate Waste’ program and website.

76. Promote businesses and solutions for people wishing to donate or recycle items.

77. When the new collection contracts are prepared in 2014, the successful tenderer should be required to provide a fixed annual fee towards education to support a range of initiatives that aid in community education and understanding of the entire waste service.
Commercial and Industrial

78. Council should conduct a waste audit of commercial bins to determine weight and composition and subject to the findings, undertake a review of fees and charges if bins are found to be substantially heavier than residential bins to prevent cross subsidisation.

79. Explore opportunities to forge greater links with the business community.

80. Promote waste collection services to the business community by offering multiple lifts of 240L bins.

81. During the negotiations for the next collection contract, seek support from tenderers as to how to provide greater support to the business community.

82. Council to promote recycling services offered to the commercial and industrial sector including the new and emerging organics collection services as well as traditional services for cardboard and glass.

83. Council should continue to promote and support the ACTSmart Business Program, as currently recognition of the program is low.

84. Council promote the Bin Trim and Sustainability Advantage programs to the business community as free or government-assisted programs.

85. Support the training of a Council staff member in the Bin Trim tool and then undertake outreach to the business community on waste management.

Regional collaboration

86. Continue to work collaboratively within the region for the benefit of the members to gain economies of scale, improved operational efficiencies and improved resource recovery outcomes.

87. In partnership with SERRG & SEROC consider the opportunity of establishing a Sustainability Hub to co-locate composting, recycling, resource recovery, reuse, repair, education centre with demonstration gardens showcasing renewable energy and water wise plants with on-site organic management and encouraging new small business opportunities.
1. Introduction

As a society we need to consider what we buy, how we use it and when and what we do when we discard items we no longer want or need. Council can influence these decisions by providing information, education and waste and recycling services that are convenient, easy to use and well understood by the community.

Queanbeyan City Council adopted its first waste management strategy more than 10 years ago, in 1999. As a result of that strategy, a number of successful initiatives were introduced that are now the cornerstones of the current waste program. These include the optional garbage bin size, introduction of a fortnightly garden waste service and expansion of the Waste Minimisation Centre (WAMI).

There is an increasing imperative to plan for the future given the increasing costs associated with operational issues, climate change, diminishing landfill life and the current waste management budget for 2013–2014 (estimated at $4.3 million). The projected expansion of 10,000 dwellings over the next 25 years and the expiration of Council’s current waste collection contracts in 2015 result in the need for a strategic review of Council’s waste services.

The timing of the review coincides the announcement by the NSW State Government of the most significant funding package ever offered of $465 million over the next five years under the banner Waste Less Recycle More. This program commences in 2013–2014 and provides a unique opportunity for Council to seek external funds to offset some of the programs and actions identified in this strategy.

This waste strategy provides Council and its community with the future direction for continuous improvement in waste management and resource recovery, including efforts to avoid, minimise and better manage the generation of waste for the next decade. This strategy has been developed taking into account the views and opinions expressed by the community in response to the extensive community consultation and stakeholder engagement programs.

The actions outlined in the strategy are based on delivering politically acceptable, socially responsible, environmentally sustainable, and commercially viable outcomes for the next decade while meeting the new waste-diversion targets set by the NSW state government.

Achieving the targets set out below relies on the commitment of all stakeholders, including Council, residents, local businesses and visitors. This strategy seeks to achieve the following kerbside diversion targets from a baseline of 41% in 2013:

- 45% by 2015 through greater capture of recyclables;
- 64% by 2016 following the introduction of the food waste program; and
- >70% by 2023 by processing the general waste bin through an Advanced Waste Treatment facility.

NB: This excludes material delivered to the Waste Minimisation Centre (WAMI)
2. Current situation

2.1 Socio-demographics

Queanbeyan is a major regional service centre with a population of approximately 38,000\(^1\) accommodated in 16,091 dwellings within 172 km\(^2\).

The housing stock within the council comprises 67% separate houses and over 30% medium-density, with 17% multi-unit dwelling developments and 15% duplexes, villas and townhouses. Rural households represent approximately 3.4% of all households.

The Queanbeyan area accommodates 69% families, of which 47% are couples with children. Single households represent (27%) and persons over the age of 65 years are 10%.

The population is ethnically homogenous with over 90% of the population born in Australia and only speaking English at home.

The Queanbeyan Residential and Economic Strategy to 2031 has identified the potential release of up to 10,000 new dwelling allotments, which has the potential to double Council’s current service provision.\(^3\)

2.2 Current waste services and programs

Council currently provides the following waste services:

- Kerbside domestic garbage, recycling and garden waste collection;
- Bulky waste collection;
- Commercial garbage and recycling collection;
- Litter collection;
- Operation of Waste Minimisation Centre (WAMI); and
- Education for schools and the community.

2.2.1 Bin configuration – Council has a well-established three-bin system for garbage, recycling and garden waste. Eighty-eight per cent (88%) of the community downsized to the 140L general waste bin from the 240L. All kerbside collections are undertaken by contract with the current domestic waste collection contract due to expire in March 2015. The bin configuration offered is outlined below:

<table>
<thead>
<tr>
<th>Stream</th>
<th>Garbage &amp; recycling service</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
</tr>
<tr>
<td>Garbage</td>
<td>Weekly</td>
</tr>
<tr>
<td>Recycling</td>
<td>Fortnightly</td>
</tr>
<tr>
<td>Garden waste</td>
<td>Fortnightly</td>
</tr>
</tbody>
</table>

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1 2011 ABS Census Data
2 NSW EPA Waste and Resource Recovery Data Survey
2.2.2 Services – Table 2 outlines the number and type of kerbside waste services provided to households and businesses\(^4\).

<table>
<thead>
<tr>
<th>Type of service</th>
<th>Number of services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single residential premises</td>
<td>9,708</td>
</tr>
<tr>
<td>Individual multi-unit premises</td>
<td>2,900</td>
</tr>
<tr>
<td>Shared multi-unit premises</td>
<td>2,800</td>
</tr>
<tr>
<td>Commercial and industrial premises</td>
<td>1,000</td>
</tr>
</tbody>
</table>

Table 2 – Type of number of services

In addition to the kerbside services, all residents have access to:

- Two annual bulk kerbside collections;
- Collection days for e-waste and Household Chemical Cleanout Day;
- Waste Minimisation Centre for recycling of green waste, paper/cardboard, co-mingled containers, batteries, used engine oils and fluorescent lights.

Rural residents have access to a rural recycling station at Fernleigh. Council has recently offered rural residents an optional garbage and/or recycling service as part of the development of this strategy.

Council installed public place recycling bins in Crawford Street and at the Sensory Gardens and undertakes a range of waste-related activities including participating in programs and campaigns such as National Recycling Week, Don’t Be a Tosser, Clean Up Australia Day, Mobile Muster, and Planet Ark printer cartridge collections.

In partnership with the ACT Government, Council supports the ACTSmart Business Program recycling program, which assists businesses to review and modify practices to reduce waste. Council joined the program in December 2011 to be a role model for other businesses in the area with a focus on improving recycling rates including the separation of organics and won the innovations award for implementing a Bio-Regen unit which converts food waste into a bio-fertiliser now being trialled on Council sporting fields to reduce the need for commercial fertilisers.

2.2.3 Operating budget – Over the last decade waste disposal fees alone have increased from $33/t in 2001 to $128/t today. With diminishing landfill and increasing operational costs Council’s waste budget expenditure will continue to escalate over time. The annual operating budget for waste management services is projected as $4.3 million for 2013–14. All costs for all waste services are recovered through council rates. Waste management expenditure represents 15% of Council rates income and is separately itemised on the council rates notice as Domestic Waste Management Charge (DWMC).

2.2.4 Charges – These are based on actual costs and do not allow Council to profit from or cross-subsidise any other activity. Reserve funds are allowed to enable planning and funding future large capital expenditure. The current DWMC includes the following:

- Urban – bins, delivery, collection, education, customer service, WAMI, clean-up, household chemical clean-up, e-waste events, general waste collection plus landfill costs, recycling collection plus processing gate fee and garden waste collection and processing. Fees for 2013–14 are set at 140L bin ($276), 240L bin ($367) per annum; and

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\(^4\) NSW EPA Waste and Resource Recovery Data Survey for 2012
• Rural – two clean-ups, use of WAMI, rural recycling station, household chemical clean-up, e-waste events. Fees for 2013–14 are $40 per annum. Council has offered an optional garbage and/or recycling service to be available from October 2013 at a cost of $299 for recycling and waste 240L bins and $151 for 240L recycling bin only service.

2.2.5 Waste disposal - All municipal solid waste generated in the Council area is delivered to the Mugga Lane landfill owned by the ACT Government and currently operated by Remondis (formerly Thiess Services). Council has a Memorandum of Understanding (MOU) in place with the ACT Government in relation to utilising ACT landfill. The gate fee to deliver waste for disposal to landfill in 2013–14 is $128.65/tonne (GST inclusive), representing an increase of $19/tonne over the previous year.

2.2.5.1 Recycling processing – All kerbside recycling is delivered to the Hume Material Recovery Facility (MRF), also operated by Remondis, for processing along with recycling from the ACT, Snowy River, Palerang and Yass councils. The gate price for 2013–14 is $41.54 (GST inclusive).

2.2.6 Garden waste processing – All garden waste is delivered to the Council-operated Waste Minimisation Centre (WAMI) at 5 Lorn Road where the material is inspected, contamination removed and all garden waste chipped. This material is then transferred offsite for stockpiling.

2.3 Waste diversion

Council is diverting 40% of all waste generated through the kerbside service and an estimated further 10% through the use of the free drop-off at the WAMI. Overall, Council and the community are currently diverting approximately 50% of all waste generated from landfill.

During the last decade the amount of waste sent to landfill has stayed relatively static (8,000 tonnes) while the amount of material that has been separated for recycling and composting has increased along with our total waste output as shown in Chart 1 below.

Chart 1 – Past and current waste disposal and resource recovery

The community is diverting the following materials from landfill:\(^5\):

**Table 3 – Total tonnes recovered**

<table>
<thead>
<tr>
<th>Origin and Material</th>
<th>Tonnes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kerbside – co-mingled recyclables</td>
<td>3,782</td>
</tr>
<tr>
<td>Kerbside – garden waste</td>
<td>1,883</td>
</tr>
<tr>
<td>Bulk waste – metal and garden waste</td>
<td>132</td>
</tr>
<tr>
<td>WAMI – self-hauled recycling</td>
<td>328</td>
</tr>
<tr>
<td>WAMI – self-hauled garden waste</td>
<td>3,128</td>
</tr>
<tr>
<td>Total</td>
<td>9,226</td>
</tr>
</tbody>
</table>


**Table 4 – State waste targets**

<table>
<thead>
<tr>
<th>Source</th>
<th>Target – 2014</th>
<th>Current QCC performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSW</td>
<td>66%</td>
<td>40% Kerbside only, est. 50% with WAMI</td>
</tr>
<tr>
<td>C&amp;I</td>
<td>63%</td>
<td>N/A</td>
</tr>
<tr>
<td>C&amp;D</td>
<td>76%</td>
<td></td>
</tr>
</tbody>
</table>

2.4 **System performance**

2.4.1 **Kerbside Performance standards** - The NSW EPA in August 2012 released the Preferred Resource Recovery Practices by Local Councils – Best Bin Systems. The document sets out recommended minimum service standards. The table below indicates that Council met one of the three criteria for recycling and exceeded both indicators for garden organics.

**Table 5 – Kerbside Performance standards compared to Queanbeyan**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Baseline target</th>
<th>Interim target</th>
<th>QCC performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recycling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net yield/Hhld</td>
<td>&gt;4.0kgs</td>
<td>&gt;5.5kgs</td>
<td>4.9kgs</td>
</tr>
<tr>
<td>Recovery rate</td>
<td>-</td>
<td>&gt;75%</td>
<td>83%</td>
</tr>
<tr>
<td>Contamination</td>
<td>&lt;5%</td>
<td>&lt;3.5%</td>
<td>20%</td>
</tr>
<tr>
<td>Garden organics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recovery rate</td>
<td>-</td>
<td>&gt;85%</td>
<td>97%</td>
</tr>
<tr>
<td>Contamination</td>
<td>-</td>
<td>&lt;1%</td>
<td>0.6%</td>
</tr>
</tbody>
</table>

2.4.2 **Waste Composition Study** – A kerbside domestic waste audit was conducted of 240 randomly selected tenements in Queanbeyan over 10 consecutive days in April 2013. It provides a snapshot of how well the community are using the current waste systems.

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\(^5\) NSW EPA Waste and Resource Recovery Data Survey for 2012
2.4.2.1 Overall waste generation – The average Queanbeyan household produces 15.8kg of waste per week comprising 8.7kg of general waste, 4.9kg recycling and 2.2kg of garden organics. Food waste represents 42% of the general waste bin while recyclable paper and containers are 13.5% and could be diverted to existing services. Recycling stream contamination was 20%, indicating greater education is needed.

2.4.2.2 Recovery rates – shows the amount of any specific material that is separated for recycling. The chart shows that the community have embraced garden organics, cardboard/paper and glass recovery. There is potential to recover more plastics, metals and liquidpaperboard of all of the other materials.

Chart 2 – Overall household waste generation

Chart 3 – Recovery rates
2.4.2.3 Recycling stream contamination – This ranges from 11–29%, with the average over the collection cycle of 20%, indicating greater education is needed. The NSW Government specify a service standard of not greater than 3.5–5%.

![Chart 4 – Contamination in recycling by day of collection](chart)

2.4.2.4 Diversion – Based on the waste audit, the current diversion rate from kerbside services is 38.4%. The potential additional maximum diversion possible, based on 60% additional diversion of food and recycling, is 60%. This is short of the current state government waste diversion target of 66% by 2014.

![Chart 5 – Diversion rates](chart)
3. Community consultation

To inform the development of the strategy an extensive community consultation program was conducted between April and June 2013. A range of methods was used to engage with the community including print and social media, community surveys, focus groups and stakeholder briefings and meetings. A community survey was delivered to 22,604 addresses attracting a response rate of 4,179 surveys, which represents a response rate of 18.5% of all surveys delivered or 28% of total households\(^6\). In total, 3,805 urban, 119 rural and 199 business surveys containing over 4,000 comments were received and analysed. Council’s web site recorded 411 views of the background information and 59 persons attended the focus groups and stakeholder meetings. Due to the large number of responses and demographic spread, the survey results provide a robust indication of ratepayer views regarding current and future waste services.

Council also sought to maximise community involvement and input into the draft strategy by seeking community feedback. Council’s web content management system indicates that there were 119 views of the draft Waste and Resource Recovery Strategy when on public exhibition. Only submissions received in writing by email or letter were considered. In total 11 submissions containing over 60 comments were received with most comments of a high quality, well founded and constructive. In total 42 persons attended the focus groups and stakeholders meetings to hear first-hand the proposed strategy actions and recommendations.

3.1 Community-consultation outcomes

The results of the community consultation programs have been compiled in separate reports. The results of the surveys and first round of focus groups are summarised below.

3.1.1 Customer satisfaction – The results of the urban survey indicate that the majority of residents (88%) are satisfied to very satisfied with the existing waste services while in rural areas, 40% are very satisfied with the current service. The main areas of dissatisfaction are clean-ups, chemical and e-waste collections.

3.1.2 Rural waste collection – The majority of the community opposed optional garbage and/or recycling service and the results were identical to those for and against a mandated service. The majority (72%) use a private contractor for waste but 15% of households don’t recycle, while others take waste to work, use public litter bins, WAMI, burn or bury.

3.1.3 Bin capacity – A significant number of households are having capacity issues with the current bin where 56% of recycling bins, 35% of general waste bins and 44% of garden waste bins are full to overflowing. Approximately 70% requested a weekly recycling service due to capacity issues. A third of households (31%) indicated that the 140L general waste was less than 50% full at time of collection and 26% indicated that they would downsize to an 80L bin subject to the cost saving.

\(^6\) ABS August 2011 Census- 14,111 occupied dwellings
3.1.4 Food waste – Half of the survey respondents (50%) indicated that they support a food waste service being introduced with the current garden waste service. Ninety-eight per cent (98%) of attendees at the focus groups supported the concept after seeing a demonstration of kitchen caddies and bio-bags that would be supplied to support the initiative. Explanations regarding the range of materials that would be accepted in the collection (all food waste) and details of the operation of a commercial composting operation including adequate odour management were outlined.

3.1.5 Bulky waste – 60% of the urban respondents use the service once per year. Options explored at the focus groups included a ‘pay as you go’ option, so only those that use the service pay for the service. Other considerations included promoting second-hand Saturday/Sunday, with a clean-up collection arranged for the following week to remove any unwanted and unsold or taken items. In rural areas, the service was used by 56% of respondents with the majority (75%) using it twice per annum.

3.1.6 Illegal dumping – The real issue is in medium-density areas with a high proportion of units with transient tenants leaving waste behind and only two scheduled collection services per year.

3.1.7 WAMI – The community would like to deliver paint, out-of-date chemicals, e-waste, furniture, whitegoods, tyres and mattresses. The need for a reuse shed with links to a social enterprise group or the Men’s Shed was strongly supported. An overwhelming majority (98%) supported the concept of an expanded facility offering greater recycling, reuse and resource recovery opportunities.

3.1.8 E-waste collection – A permanent e-waste collection location was preferred by 96% of focus group attendees over an event that members indicated that could miss if they were away or unaware of the date.

3.1.9 ACTSmart Business Program – The business survey respondents indicated that only 16% were aware of this program, indicating greater promotion is required.

3.2 Issues for consideration

Based on the findings of the community consultation program, it is recommended that the waste strategy considers (as a minimum) the following issues:

3.2.1 Food waste

1. Promote avoidance of food waste by community outreach in addition to passive “Love Food Hate Waste” initiative by the NSW Government.
2. Conduct a trial to ascertain the take-up rate, contamination rates and issues associated with food/green waste collection and services.
3. Introduce a source-separated food waste collection service as part of the 240L garden waste collection service for all households.
4. Provide each householder with a kitchen caddy and a supply of bio-bags.
5. Opportunities for funding by the Waste Less Recycle More program of the food waste program initiative should be considered locally and regionally.
6. Conduct a domestic waste audit after food waste introduced to quantify carbon impact and performance.
3.2.2 Organics waste management

7. Improve knowledge of composting and worm farming by holding training programs.
8. Offer subsidised worm farms and compost bins to those who complete training.
9. Offer worm farms and compost bins at cost to the community.

3.2.3 Bin capacity

10. Where additional bin capacity is required, provide as an option a 360L recycling bin at minimal additional charge.
11. Where additional garden waste capacity is required, provide additional 240L bins.
12. In preparing for the next waste collection contract, Council specify that the collection fleet must be capable of collecting bins ranging from 80–240L capacity for general waste and from 240–360L for recycling.
13. Based on the contractor’s ability to collect an 80L bin, Council offer the community an 80L general waste bin option for low waste generators for a reduced waste charge.
14. The existing garden waste bin at 240L should remain the only size option due to potential weight issues with bin usage.
15. Should the waste contractor be able to collect bins as small as 80L, then residents be offered the opportunity to downsize their garbage bin.

3.2.4 WAMI

16. Improved publicity of WAMI location, services and cost.
17. Investigate either reconfiguration of the existing WAMI or a new location to offer an expanded drop-off area for e-waste, mattresses, paint, chemicals, clothing/textiles, and unwanted but re-useable household items and furniture.
18. In the short term, establish a permanent e-waste collection location at the WAMI using a shipping container in which to store and transport collected computers and televisions.
19. Investigate by expression of interest the establishment of a tip or Revolve-type shop at the new or reconfigured recycling/reuse/resource recovery facility for reusable goods or such goods be provided to an existing or new business or social enterprise with strong social ethic.
20. It would be desirable that the new recycling/reuse/resource recovery facility site be suitable for the disposal, processing and sale of garden waste to prevent double handling.

3.2.5 Bulky waste

21. Continue twice yearly collections for urban and rural areas and option for payment for extra collections.
22. Monitor and measure illegal dumping in urban area. Maintain the frequency of the bulky waste service in areas of medium density to two per annum.
23. Council promote trash and treasure day or second-hand Saturday/Sunday as a trial prior to full implementation.
3.2.6 Illegal Dumping

24. That consideration is given to a RID Squad, where a team of council rangers works exclusively to pursue illegal dumping. The squad could work either as a council group, sub-regional group in association with ACT (given the proximity of boundaries), or as a regional group.

25. Set up motion activated cameras in target hot spots.


27. Encourage more dialogue between real estate agents/health inspectors and rangers in the quest to better understand and respond to incidents.

28. Provide real estate agents and strata managers with information packs for new residents, highlighting penalties for illegal dumping.

29. Agents be encouraged to advise strata managers when tenants are vacating in an effort to reduce and manage indiscriminate footpath dumping.

3.2.7 Business recycling

30. Continue promotion of the ACTSmart Business Program given there is little awareness of the program.

31. Council needs to conduct a waste audit of commercial premises waste bins to determine weight and composition and subject to outcome review fees and charges to ensure the community are not subsidising business waste generation.

32. Explore greater links to business community.

3.2.8 Away from home recycling

33. Expand the recycling bins to include more shopping precincts, pool and sports fields and parks.

34. Offer recycling opportunities at major sporting events and activities.

35. Council consider the purchase of specific bins and hoods to clearly differentiate what products go where for use at events and sporting functions.

3.2.9 Education

36. Continue to engage KAB to deliver the annual waste-wise school education program to all public and private schools within Queanbeyan.

37. Council needs to develop a range of materials with consistent messages in regards to the types of bins, systems, costs and how to use them correctly for all waste services.

38. Provide education in a range of mediums and programs for school and community outreach including calendar, what goes where, fridge magnets, etc.

39. Develop bin stickers for placement on either the outside of all bin lids or front of bin.

40. Market test all graphics and educational material to gauge community understanding.

41. Promote the State Government ‘Love Food Hate Waste’ program and website.
42. Promote and include on the website easy-to-find businesses or solutions for people wishing to donate or recycle items.

43. Council continue to promote freecycle.org and Gumtree websites.

44. Identify and promote local champions.

3.2.10 Development

45. Development control plans for garbage storage areas in all developments to ensure sufficient bin space provided for recycling and waste and future organics, as well as ease of access for contractors to access the bins.

3.2.11 Sustainability Hub

4. Principles

Different communities have different motivators and issues, and therefore require different waste solutions. However, the main over-arching principles behind any waste strategy should be the Principles of Ecologically Sustainable Development (ESD) and the waste hierarchy, which are outlined below.

4.1 Ecologically Sustainable Development (ESD)

The Principles of ESD have been encompassed in a multitude of Australian state and federal environmental laws and provide guidance on the management of waste and the facilities which recover, treat or contain it. The Principles of ESD are:

1. The Precautionary Principle;
2. Intergenerational Equity;
3. Conservation of Biological Diversity and Ecological Integrity; and

These four principles aim to govern the management of waste by ensuring that:

- Waste management does not cause negative or unintended consequences to the wider environment;
- Does not affect biodiversity and ecological integrity;
- It is the burden of the current generation and not shifted on to the future; and
- That the generator of the waste bears the full cost of the treatment and management, both now and in the future.

4.2 Waste Hierarchy

This internationally-recognised guide for prioritising waste-management practices sets out the most-to-least preferred methods for waste management globally, and is commonly illustrated as an inverted triangle. The waste hierarchy has evolved over the past four decades and now includes seven steps as alternatives to landfill.

![Chart 6 – The waste hierarchy](chart6.png)
5. Policy context and drivers

The following key policy drivers set the scene for waste management in Australia and have been considered because they provide guidance and direction in the development of Council’s Waste and Resource Recovery Strategy. A summary of the relevant legislation, regulation, strategies, policies and programs as they impact this strategy are outlined below, however a number of these are currently due for review, under development or recent changes have already been announced. The legislative framework is constantly evolving and requires constant monitoring.

5.1 National Policy Drivers

5.1.1 National Environment Protection Act 1994 – binds all state and territory jurisdictions to the principles of Ecologically Sustainable Development.


5.1.3 Product Stewardship Act and Product Stewardship (Televisions & Computers) Regulations 2011 – requires manufacturers of TVs and computers to provide for the end-of-life recycling of these products, with targets of 30% in 2012–13, increasing to 80% in 2021–22. It is considered that paint and batteries will be the next products to be covered by such an arrangement.

5.1.4 The Australian Packaging Covenant – is a voluntary co-regulatory arrangement which requires manufactures, importers or brand owners to take responsibility for the packaging they produce with targets of 70% recycling of used packaging by 2015.

5.1.5 Carbon Pricing Mechanism – aims to reduce Australia’s carbon emissions profile and requires all landfills above the 25,000 tonnes CO₂e threshold to report. As the carbon liability will be generated over a 40-year time horizon, gate fees are increased at the time of disposal to cover forward financial liabilities. The coalition government, elected in September 2013, have indicated that they will significantly modify the previous government programs and introduce a direct action plan. The implications for the waste sector are at the time of this report are uncertain.

5.1.6 Container Deposit Scheme (CDS) – this approach has been proposed under the National Waste Policy 2009. A decision on whether a federal CDS is introduced is expected after the 2013 federal election. This has implications for kerbside recycling schemes as processing fees may change and new designated locations maybe established for deposit redemption.
5.2 State government policy drivers

5.2.1 Waste Avoidance and Resource Recovery Act, 2001 (WARR) – aims to encourage the efficient use of resources and reduce environmental harm, in accordance with the principles of ESD and sets framework for WARR Strategy.

5.2.2 WARR Strategy – contains four non-mandatory targets to be achieved by 2014.

1. Preventing and avoiding waste: To hold at current levels the total waste generated for the next five years.
2. Increasing recovery and use of secondary resources: State waste targets for MSW (66%), C&I (63%) and C&D (76%).
3. Reducing toxic substances in products and materials.
4. Reducing litter and illegal dumping: Reduce total volume and tonnages of litter reported annually and reduce the total tonnages of illegally dumped material.

The Government is revising the Strategy with new waste diversion targets likely to be MSW (70%), C&I (70%) and C&D (80%) with six new KPI’s relating to:

- Increased resource recovery;
- Increased diversion from landfill;
- Avoiding waste;
- Reducing problem waste;
- Reducing litter; and
- Reducing illegal dumping.

5.2.3 Reducing Waste: Implementation Strategy 2011-2015 – aim to focus activity where the greatest potential for resource recovery exists. The key areas are:

- Making it easier for households to separate and recover their waste;
- Making it easier for businesses to separate and recover their waste;
- Reducing or removing problem wastes to improve resource recovery and produce environmentally safe recyclable materials; and
- Facilitating investment in waste infrastructure.

5.2.4 NSW 2021 – This is the NSW Government’s strategic 10-year business plan, with 32 goals and specific targets for increasing recycling, reducing litter and illegal dumping. These targets are outlined below:

- Reduce the incidence of large-scale (greater than 200m³ of waste) illegal dumping detected in Sydney, the Illawarra, Hunter and Central Coast by 30% by 2016;
- Increase recycling to meet the 2014 NSW waste recycling targets; and
- By 2016, NSW will have the lowest litter count per capita in Australia.

5.2.5 EPA’s Strategic Plan 2013–2016 – nominates a state waste diversion from landfill target of 75% by 2021–22.
5.2.6 **NSW Waste and Environment Levy** – The aim of the levy is to impose a cost of pollution and drive recycling or reusing. The levy applies to certain areas of the State. The government are considering extending the levy to all landfills that receive more than 5,000 tonnes of waste per year, regardless of location. The future of levies in rural NSW is unclear at this time. The government has announced a proposal in June 2013 as reforms to the Protection of the Environment Operations Act to extend the levy to all compost and recycling facilities within the levy area subject to thresholds requiring weighbridges to be installed.

5.2.7 **Waste Less, Recycle More** – a funding package of $465.7 million over five years commencing 2013–14 to assist meeting the recycling targets, stimulates investment in infrastructure and combat illegal dumping and littering. Of the available funds, 48% will go to councils, 38% will be contestable grants available to councils, industry and non-government organisations (NGOs). The grants will be administered by the NSW Environmental Trust.

5.2.8 **Protection of the Environment and Operations Act 1997 (POEO Act)** – The Act provides the powers that council rangers and enforcement officers use to penalise and prosecute offenders for littering and illegal dumping.

5.2.9 **The Protection of the Environment Operations (POEO) Amendment (Illegal Waste Disposal) Bill** – recently passed this Bill includes stronger penalties for offenders who commit a waste offence, supply false or misleading information about waste, allows EPA to seize a motor vehicle used in repeat waste offences and courts can take into account profit from the offence. Every licensed waste facility (including 134 MRF’s, transfer stations, recycling centres, compost and AWT plants) within the landfill levy area will now pay the landfill levy. These facilities will need to install a weighbridge and data management system and may need to renegotiate contracts. Grants of up to 50% of the weighbridge cost (capped to $50,000) will be offered to assist in the transition.

5.3 **Regional policy drivers**

5.3.1 **The ACT Government** – *Waste Strategy 2011–2025* sets ambitious targets:

1. The growth in ACT waste generation remains less than the rate of population growth;
2. That the rate of resource recovery increases to:
   - 80% by 2015;
   - 85% by 2020; and
   - 90% by 2025.
3. Energy generation from waste doubles by 2020;
4. ACT leads Australia in low litter levels and incidents of illegal dumping;
5. ACT’s natural resources are protected and where feasible enhanced through waste management.

The existing landfill life at Mugga Lane is expected, based on current trends, to expire in 2035 or 2080 if the strategy targets are met. The ACT is seeking private sector investment in:

- Dry commercial waste MRF – 100,000 tonne capacity facility;
- Wet ‘dirty’ MRF – for residual wet waste;
- Energy from Waste (EfW) facility – EOI closed April 2013.
5.3.2 South East Regional Organisation of Councils (SERC) — Regional Waste Management Strategy 2012–2032 comprises the future direction of 12 councils comprising the South East Resource Recovery Group (SERRG), within the region covered by SERC. The vision is: ‘A waste-free south east community where sustainability is second nature’. The strategy forecasts that waste will increase by 50kg per person per year. The strategy has detailed four-year outcomes and each key action is provided with a purpose, objective and KPI to enable regular and on-going measuring and monitoring.

5.4 Local policy drivers

5.4.1 Community Vision — Initially developed in 2006 and reviewed 2011–12. Six Strategic Priorities.

5.4.2 Community Strategic Plan — Council’s draft Integrated Plans for 2013–23 include the following key strategic direction under section 6.2 of the Strategic Priority 6 – The Environment:

- Continue to develop high quality waste management practices that includes recycling, organics, avoiding waste, reuse etc.

5.4.3 Queanbeyan City Council Residential and Economic Strategy 2031 — Identifies the needs for 10,000 dwellings and 100ha of employment lands over the next 25 years.

5.4.4 Sustainability Policy in 2011 — This policy demonstrates Council’s commitment the principles of ESD. A Sustainability Action Plan has been developed.

5.4.5 Community Climate Change Action Plan — Council adopted this plan in 2012 to guide and address climate change. There are a few actions on waste.

5.4.6 Council Climate Change Action Plan 2013–2017 — This plan was recently adopted by Council with a target to reduce total Council greenhouse gas emissions from the 2009/2010 baseline by 25% by 2020. Waste from residential premises generates 48% of all emissions. Nine actions are identified including specifying in the next waste collection contract the need to use fuel efficient vehicles.

7 Strategic Economy Solution, June 2012
Currently, Council falls short of the State Government targets. Identification of all the options and predictions of the likely impacts of each option are needed in order to make informed decisions. It is imperative to determine how each waste stream will be managed as the collection system and processing option must seamlessly fit together. In addition, the community must understand the intent and desired action and outcomes sought.

APC undertook modelling to determine potential and likely diversion rates from the current domestic kerbside waste stream based on various options. The data used came from the kerbside waste audit from April 2013 and the Council EPA survey data.

Audits of councils across Australia using source-separated recycling and organics collections show that no system will capture 100% of the materials available. Penrith City Council’s combined food and garden organics service is achieving a 50% diversion rate of all available food in the domestic waste bin. The table below shows the assumptions used in relation to each modelled option.

**Table 6 – Assumptions used in model**

<table>
<thead>
<tr>
<th>Domestic resource-recovery system</th>
<th>Likely recovery rate ^</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased recyclables capture</td>
<td>50%</td>
</tr>
<tr>
<td>Combined food &amp; garden organics</td>
<td>60%</td>
</tr>
<tr>
<td>Combined food, garden, and disposable paper</td>
<td>60%</td>
</tr>
<tr>
<td>Mechanical Biological Treatment</td>
<td>80%</td>
</tr>
<tr>
<td>Thermal treatment</td>
<td>95%</td>
</tr>
</tbody>
</table>

^ Likely recovery rates – adjusted to account for the likely participation rates based on APC’s waste-auditing experience.

**Options modelled include:**

**Option 1** – concerted effort to increase recycling through increased education, contamination intervention and households nominating for larger recycling bins to increase capacity. This should lift diversion from 41% to 45%, based on a 50% capture of available materials.

**Option 2** – as option 1 above plus a source-separated food waste recovery program with a caddy and bio-bags using the existing garden waste bin. This would lift recovery from 45% to 60%, based on 60% food waste recovery.

**Option 3** – as for option 2 plus including non-recyclable paper (disposable and contaminated paper products like hand towels, tissues, soiled paper, napkins, paper food bags and paper not suitable for recycling). This would lift diversion a further 4% to 64%, based on 60% paper recovery.

**Option 4** – as option 1 but in lieu of extending the food waste program divert the existing residual bin to an AWT process such as MBT where the recyclable and organics would be recovered and the soil conditioner output is used on mine rehabilitation. This approach would lift diversion to an expected 69%, based on 80% recovery. This option is not currently available but is expected to be from 2017 onwards.

**Option 5** – as option 1 but in lieu of extending the food waste program divert the existing residual bin to an Energy from Waste thermal process. AWT processes such as MBT where the recyclable and organics would be recovered and the soil conditioner output is used on mine rehabilitation. This approach would lift diversion to an expected 90%, based on 90% recovery. This option is not currently available but may be during the life of this strategy, subject to ACT Government’s programs.
The potential diversion rates that can be achieved based on various collection and processing options are shown in the chart below, where the likely diversion rate is combined with the existing diversion rate of 41% for each system. The 41% includes all materials diverted through the kerbside recycling and garden waste bins but excludes materials delivered to the WAMI and loads delivered directly to Mugga Lane landfill. Council states that an additional diversion of 10% is achieved by the deliveries to the WAMI, however there is a lack of reliable weight-based data as no weighbridge is provided at the site.

The total anticipated diversion rates by option is shown graphically below for the kerbside system and that only option 4 or 5 will exceed that state waste diversion targets. However, if the indicative WAMI data is added, implementing option 2 and 3 should meet or exceed the current and proposed new state waste target.

Chart 7 – Potential diversion rates (excluding WAMI data)
7. Future services and facilities

7.1 Recycling

As a priority, Council needs to:

1. Decrease the extremely high levels of contamination, which average 20% but range from 11–29%; and
2. Improve recovery rates, as currently 13.5% of the general waste bin contains recyclables. By targeting half of this material, a further 4% diversion could be achieved.

There appears to be bin capacity issues, as 56% of the community indicated their recycling bins are full to overflowing and 70% requested a weekly recycling service. To assist those households that need additional capacity an option is to provide a larger 360L recycling bin, which can be collected using the same collection vehicle and could be provided at minimal additional charge to encourage greater source by the community.

Council needs to develop and/or implement a Contamination Management Policy that provides clear directions on the actions council officers and its contractor can take in respect to householders who contaminate recyclables on a regular or irregular basis. As part of this program, Council and/or the contractor should engage a bin auditor to personally inspect every recycling bin prior to collection on multiple occasions in an effort to identify and enable targeted communications with the offending households.

To achieve these goals requires a concerted effort to raise awareness through a comprehensive education and contamination program. Council could offer a rewards program by randomly selecting households that have zero contamination in their bins. This sends a positive message to complement the bin contamination policy.

Recommendations

1. Improve recycling recovery through increased awareness/education programs.
2. Develop and/or implement a recycling bin contamination policy.
3. Where habitual offenders continually contaminate recycling, revoke the recycling service.
4. Council, in conjunction with the contractor, engage a bin auditor to routinely inspect every recycling bin prior to collection on multiple occasions to identify and allow targeted communication to offending households.
5. Where additional recycling bin capacity is required Council provide as an option a 360L recycling bin at minimal additional charge.
6. In preparing for the next waste collection contract, specify that the collection fleet must be capable of collecting bins ranging 240–360L for recycling.
7.2 Recycling processing

Council currently contracts with ACT NOWaste to deliver all kerbside collected and containers delivered to the WAMI and to the Hume Material Recovering Facility (MRF) operated by Remondis. Council should continue to support this arrangement, which has been working well for the past 18 years and presents a risk-free approach.

Recommendation

7. Maintain the current contractual arrangements with ACT NOWaste and Remondis in relation to acceptance and processing of all recyclables generated by Council.

7.3 Garden waste

The community have embraced the garden organic service with less than 1% garden waste found in the general waste bin and less than 1% contamination in the garden waste bin. These are all excellent indicators of an engaged community who understands the current program.

There appears to be bin capacity issues, as 44% of the community indicated their garden waste bins are full to overflowing. Additional garden waste capacity should be provided where a regular need is demonstrated on a cost-recovery approach.

Recommendations

8. The existing 240L garden waste bin should remain the only size option due to potential weight issues with bin usage.

9. Where additional garden bin capacity is required, Council provide additional 240L bin on a cost-recovery basis.

7.4 Garden waste processing

There are a number of factors Council needs to consider assessing processing options, including (but not limited to) capital investment, operating costs, type and quantity of feedstock, site location and size, regulatory requirements and end markets.

It is suggested that a comprehensive business plan be undertaken by an independent third party to consider the full range of options, including cost–benefit analysis and risk profile in relation to options for collection, transport of the self-hauled loads and the processing and marketing of the finished product, from both the self-hauled and existing garden waste collection.

The following aspects need to be considered when assessing and comparing different processing technologies and service providers:

- Investment costs ($ / tonne throughput);
- Operating costs ($ / tonne throughput);
- Operational experience;
- Options for process management;
- Options for achieving desired product quality;
- Risk of emitting odour and releasing leachate;
- Ability to process different feedstock;
- Options for expanding processing capacity;
- Footprint (tonne annual throughput per square meter); and
- Energy and water use.
A brief comparison between different composting technologies is provided in the table below.

### Table 7 – Processing options for garden waste

<table>
<thead>
<tr>
<th>Technology</th>
<th>Aeration</th>
<th>Air purification</th>
<th>Investment cost</th>
<th>Land area required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vermicomposting</td>
<td>Passive</td>
<td>No, but possible</td>
<td>Low to medium</td>
<td>Large to medium</td>
</tr>
<tr>
<td>Windrowing</td>
<td>Turning, passive aeration</td>
<td>No</td>
<td>Low</td>
<td>Very large</td>
</tr>
<tr>
<td>Aerated static pile</td>
<td>Positive/negative forced aeration</td>
<td>No, but possible</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>In-vessel composting</td>
<td>Agitation, mechanical turning, forced aeration</td>
<td>Yes, but exceptions</td>
<td>Large</td>
<td>Medium to small</td>
</tr>
<tr>
<td>Fully enclosed composting</td>
<td>Agitation, mechanical turning, forced aeration</td>
<td>Yes</td>
<td>Very large</td>
<td>Medium to small</td>
</tr>
</tbody>
</table>


In addition, since the above study was commissioned, static fermentation has emerged as a viable and economical composting process. It has been demonstrated in a number of local council areas including Armidale Dumaresq, Goulburn Mulwaree and Upper Lachlan through the City to Soil program.

Although investment and operating costs are usually among the most important factors in deciding for or against a certain processing technology or solution, this information is rarely available in the public domain. Data suggest that costs for composting range between $25 and $130 per tonne (note that processing cost may be different to gate fee charged). Composting of garden organics alone incurs significantly lower costs than co-composting of garden organics with food or other putrescible materials.

Processing costs and gate fees for composting are commercially sensitive, and therefore not publicly divulged. Council should therefore seek to undertake an expression of interest (EOI), as costs for composting vary greatly, depending on the type of materials processed, annual throughput, the type of technology employed, and the kind of products generated.

Council has been collecting approximately 1,800 tonnes of garden waste per annum for the past 13 years. This material is chipped and the community buy approximately 400 tonnes, commercial landscaper purchases 180 tonnes and Council uses 150 tonnes with the remainder stockpiled.

A quantity surveyor inspected the stockpile in June 2013 and estimated that ‘between 7,000 and 10,000m³ or between 2,800 and 3,500 tonnes of garden waste are stockpiled’. In 2012 part of the stockpile caught fire through spontaneous combustion, a key risk with garden waste, and the only commercial buyer is reducing his purchases due to poor quality.

Currently, Council does not appear to have a management plan for this material nor the trained staff, equipment and marketing skills to gain a return on it.

Funding is available through the Waste Less Recycle More Organics Infrastructure Fund of $43 million over four years for new and renovated infrastructure across NSW for garden waste with or without food. Specifically the Small Organics Infrastructure Fund will provide contestable grants for equipment for receipt, management and processing of organics and/or onsite organics processing equipment.
Funding will be based on increasing organics diversion and, given the diversion is existing and the location of the stockpile is on ACT land, early discussions with the NSW EPA have indicated that the funding is unlikely to be provided for an asset to be located and a process to occur within an adjoining jurisdiction. Based on this advice, it is strongly suggested that Council needs to seek clarity in relation to the EPA ruling on this as a matter of urgency.

Council should engage an external contractor to process and screen the existing stockpiles at a cost of between $50,000 and $75,000, which could generate a return of between $100,000 and $200,000 when sold to the market as low grade mulch at $15 and $20/m³. Given the massive amount of new housing to be constructed in the near future a local market could absorb this volume of material.

Recommendations

10. That council seek expressions of interest from interested parties to:
   a) process the existing stockpile of 7,000–10,000m³ of garden waste into grades suitable for sale;
   b) receive and process the estimated 3,000 tonnes garden organics delivered to the WAMI; and
   c) Receive and process the anticipated 1,800 tonnes of garden waste arising from the garden organics kerbside collection.

11. That the above information inform the development of a comprehensive business plan to consider the full range of options including cost–benefit analysis and risk profile in relation to:
   a) options for collection, transport of the self-hauled loads; and
   b) processing and marketing of the finished product from both the self-hauled and existing garden waste collection.

12. As a matter of priority, Council should utilise the information gained from the EOI process above to inform the development of a comprehensive business plan, including a full cost and risk assessment.

13. Council promote the sale of mulch and matured processed green waste to the community.
7.5 Food waste

Currently, food waste represents 42% of the general waste bin. The waste audit 2013 revealed that 49% of the general waste bin contained organic waste which could be potentially recoverable in the garden waste bin as shown in the table below.

<table>
<thead>
<tr>
<th>Material</th>
<th>kgs/Hhld/week</th>
<th>% of bin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td>3.62</td>
<td>41.6%</td>
</tr>
<tr>
<td>Non-recyclable paper</td>
<td>0.57</td>
<td>6.6%</td>
</tr>
<tr>
<td>Garden/vegetation</td>
<td>0.07</td>
<td>0.8%</td>
</tr>
<tr>
<td>Total</td>
<td>4.26</td>
<td>49%</td>
</tr>
</tbody>
</table>

Effectively each house is discarding 221kgs of organic matter and the community is discarding 3,400 tonnes of food per annum. If 50% recovery is achieved, an additional 1,700 tonnes could be recovered.

Half of the survey respondents (50%) indicated that they support a food waste service being introduced with the current garden waste service. At the focus group, the majority (98%) of attendees supported the concept after seeing a demonstration of a range of kitchen caddies and bio-bags that would be provided in line with best practice to support this initiative.

Initially it is suggested that households with an existing garden waste service be provided with the program. Council could then offer an ‘opt in’ service for larger multi unit premises where the body corporate nominates its building to be part of the program.

A concern expressed by some was about potential odour if the garden waste bin containing food was not going to be picked up weekly. Other councils offer either a weekly or fortnightly service.

It has been found through studies conducted by other areas that greater participation and food waste diversion were achieved where a weekly service was offered. It is suggested that the current collection cycle of fortnightly collection be maintained in the interim, however that Council re-assess the program by conducting trials to determine household behaviour, participation and food waste separation to determine if the service frequency should be altered to weekly, and the general waste bin converted to fortnightly collection.

The NSW Government’s Waste Less Recycle More funding package offers infrastructure funding for the establishment of food waste collection systems. Initially there is consideration of up to $35 per household for new mobile garbage bins, kitchen caddies and liners and education. A sum of $20,000 will be available for waste audits to determine performance and a contribution to other costs directly associated with increased organics collection.

Clearly the timing is right for Council to introduce such a program that is supported by the community. The state government is offering substantial funding to offset the initial establishment.

Recommendations

14. As a matter of priority, Council undertake the development of a comprehensive business plan including a full cost–benefit analysis and risk profile in relation to the exploring the options for collection, transport, processing and marketing of the finished product from a future food and garden waste collection.

15. Promote avoidance of food waste by community outreach in addition to supporting the passive “Love Food Hate Waste” program initiative of the NSW Government.
16. Conduct a trial to ascertain the take-up rate, contamination rates and issues associated with food/green waste collection and services.

17. Introduce a source-separated food waste collection service as part of the 240L garden waste collection service for all households with an existing garden waste bin.

18. Provide each householder with a new 240L mobile garbage bin, kitchen caddy and on-going supply of bio-bags.

19. Consider both local and regional opportunities when applying for the state government Waste Less Recycle More grant funding to offset the cost of implementation based on $35/household and $20,000 for waste audit.

20. Council offer an ‘opt in’ service for medium-density housing where the body corporate nominates its building to be part of the program.

21. Council review the garden/food program including conducting a domestic waste audit to quantify participation, contamination, diversion, recovery and carbon reduction impact. Residents should be surveyed regarding collection frequency to determine if changes should be introduced to the garden/food and general waste service frequency.

22. That Council seek expressions of interest from interested parties to receive and process the estimated 3,500 tpa of combined food and garden waste arising from the new garden organics kerbside collection service to be introduced in 2015.

7.6 Rural waste services

The rural community is divided in relation to the provision of Council garbage and recycling service, due in part to the excellent waste service currently offered by the private contractor to approximately 72% of all properties. The current waste contractor does not provide a recycling service. Approximately 15% of rural residents don’t recycle, while others either burn or bury on their property or bring waste, including recycling to town and place in litter bins, work bins or use the WAMI.

The majority of respondents (56%) do no support the optional garbage recycling service while 35% are prepared to pay up to $299 for this service. Council could consider providing optional a combined garbage and recycling service for those rural residents who wish to access the service. In addition, an optional recycling service could be provided to those residents seeking this service (5%) but have other private arrangements for their garbage disposal and would like the convenience of a kerbside recycling collection service.

To encourage take up of the kerbside recycling service Council should close the Fernleigh Park recycling drop-off due to misuse, illegal dumping, community complaint, as much of the recycling is contaminated and the site has on-going maintenance issues.

Recommendations

23. Council should offer the rural community:

- an optional 240L yellow lid recycling bin and 240L red lid garbage service, serviced on alternate fortnights; or
- an optional recycling service only for those properties with alternative waste arrangements.

24. That the recycling drop-off facility at Fernleigh Park be closed following introduction of the above services.
7.7 General waste

Council has already introduced volume-based charges where the householder selects the bin size needed based on household size and waste generation for general waste. The options are 240L or 140L, with a cost differential of $85. 88% of households use a 140L bin. Households are provided with an opportunity to change size once per year and the associated administration cost, bin collection and delivery fees are charged separately to the Domestic Waste Management Charge.

The community consultation and waste audit confirmed that between 31–36% of bins were less than 50% full at the time of collection. Single, couple and aged householders typically manage with a smaller bin subject to waste practices in the household. The waste volumes closely match the demographic data, in that 27% of households are single person and 10% of the population are over 65 years of age.

Council should consider extending its variable bin pricing mechanism to include a smaller 80L bin size to reward those low waste-producing households.

In preparing for the next waste collection contract, Council needs to specify that the collection fleet must be capable of collecting bins ranging from 80–240L capacity for general waste.

Recommendations

25. Council offer the community an 80L general waste bin option for low waste generators for a reduced waste charge.

26. In preparing for the next waste collection contract, Council needs to specify that the collection fleet must be capable of collecting bins ranging from 80–240L for general waste.

27. Council specify that fuel efficient vehicles would be favourably considered in the next waste collection contract.
7.8 General waste disposal

Currently, all general waste is disposed of at the Mugga Lane landfill as part of a Memorandum of Understanding (MOU) with ACT NOWaste. Since 2005–06 the amount of general waste treated at an Advanced Waste Treatment (AWT) process has trebled as councils seek to meet State Government targets.

During the next five to 10 years, it is highly likely that the government and/or private sector will invest in alternative waste treatment, seeking to reap additional value with organic or energy recovery from the discarded waste stream. Recently the largest single processing contract involving 14 councils members of the Southern Sydney Region Organisation of Councils (SSROC) was awarded to Veolia who are building an MBT plant at Woodlawn waste facility.

Prior to the development of the next collection contract, Council needs to have entered into a formal or a goodwill contract and have negotiations with both the ACT Government and the private sector in relation to current and future disposal and AWT processing of the residual stream.

Recommendation

28. That Council release an EOI to interested parties in relation to both the receipt and processing of residual waste arising from Council kerbside general waste collections.

7.9 Bin configuration

The following bin configuration should be available to all households so they can determine their needs based on waste generation and family size.

Table 9 – Bin configuration

<table>
<thead>
<tr>
<th>Waste stream</th>
<th>Single dwellings</th>
<th>Unit blocks</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garbage</td>
<td>140L (optional 80L, 240L) weekly</td>
<td>240L/2 units weekly</td>
<td>Optional 240L fortnightly</td>
</tr>
<tr>
<td>Recycling</td>
<td>240L fortnightly</td>
<td>Optional 360L</td>
<td>Optional 240L or 360L fortnightly</td>
</tr>
<tr>
<td>Garden organics</td>
<td>240L fortnightly</td>
<td>Optional</td>
<td>Not available</td>
</tr>
</tbody>
</table>

Recommendations

29. Council communicate to the community the range of waste, recycling and garden organics bin sizes and fee options available.

30. In preparing for the next contract, Council require the provision of Radio Frequency Identification Device (RFID) tags on all new bins and the appropriate hardware and software for monitoring by both Council and the contractor.
7.10 Waste Minimisation Centre

The centre is currently open seven days a week from 7.15am to 4.15pm and operates as a free community drop-off for garden waste, paper and cardboard, co-mingled recyclables, oil, batteries, fluorescent tubes and bulbs. During the consultation, the concept of an expanded facility offering greater recycling, reuse and resource recovery opportunities was widely supported (98%).

As part of the Waste Less Recycle More funding initiative, the NSW EPA will be offering $59 million in grants to establish or upgrade existing drop-off locations for low toxic problematic waste. These are identified as: gas bottles/fire extinguishers lead acid batteries, used motor oil, paint, fluorescent tubes and smoke detectors.

The funding will provide the infrastructure, hire of stillages for storage of items, signage, staff training in materials handling, collection, transport, reprocess/recycle or safe disposal of core targeted materials, except for lead acid batteries and motor oil, which are deemed to have a commercial value.

Currently, Council does not provide facilities for gas bottles, paint and smoke detectors and the community identified additional products over and above those that they would like to deliver for recovery including:

- E-waste
- Household chemicals
- Scrap metal
- DrumMuster
- Mattresses
- Used furniture

The current site has a number of constraints in terms of space. In the short-term, staff need to investigate how the site can be re-configured to offer an expanded drop-off area. The area immediately in front of the Men’s Shed is ideal for drop-off of the expanded products required by the EPA.

7.10.1 E-waste – Electronic waste (e-waste) describes any product with a cord or its peripherals, and ranges from hairdryers and blenders through to white goods. The federal government recently introduced a producer-responsibility e-waste scheme for computers and peripherals and televisions.

A permanent e-waste collection location was preferred by 96% of focus group attendees over an event, which members indicated that could miss if they were away or unaware of the date. A permanent e-waste collection location using a shipping container in which to store and transport collected computers and televisions should be provided.

We understand that SEROC has undertaken a regional tender and is in negotiations with the preferred provider DHL that will be providing fixed collection points throughout the region with the cost of the facilities and collection paid for by DHL at no cost to council. As Queanbeyan is part of the ACT catchment, it is unclear whether a separate site would be established at the WAMI. Discussion should be held with SEROC and DHL in the quest to provide a permanent site at the WAMI.

7.10.2 Mobile phones and toner cartridges – These products are able to be recovered at the Council offices, however the organisations supporting the recovery of these products provide dedicated storage containers to encourage community participation.

7.10.3 DrumMuster – provide a wire cage for the placement of used plastic agricultural containers that have been triple rinsed and are free from liquid residuals. A strong education program is necessary within the farming and agricultural community and through the retail outlets from which these products are purchased to encourage the correct disposal of these containers.
7.10.4 Mattress recycling – Mattresses occupy significant landfill space, cause operational issues at landfill and have a relatively high carbon value. It can be estimated (based on 15,000 households, two mattresses per household and a mattress turnover rate of 10 years) that 3,000 mattresses are generated in the Council area each year. Currently, residents’ only option is to deliver directly to ACT Mugga Lane landfill or place out at the kerb for the bulk waste when Council delivers them to the landfill. At this time, Council does not separate mattresses post-collection as it does with garden and metals.

A number of companies offer a mattress-recycling service. ACT currently has a contract for mattress recovery. The prices vary based on locality and number but range from $20 upwards. It is suggested that Council support and promote the introduction of a regional mattress-recycling program and consider offering this service to residents at the WAMI on a fee-for-service basis to cover the recycling fee.

7.10.5 Reuse shed – Households update and replace household items including furniture, books, clothing and bric-a-brac frequently, prior to the items being past their useful life. Many items are still fully functional. Currently, some items are sold to second-hand shops, handed down to family and friends or donated to charities, which are increasingly fussy about quality. Many household goods are either discarded on clean-up piles or left on the nature strip. Smaller items go directly into the bin and then to landfill.

Reuse enterprises ‘tip shops’ or ‘drop and swap’ centres, where materials are recycled, are now mainstream. The ACT has promoted this approach for decades. The concept requires little technology or equipment but to be truly successful it requires the operation to be run as a small business.

The community strongly support the establishment of a reuse centre with links to social enterprise. Such a facility should be provided at the reconfigured or new recycling/reuse/resource-recovery facility for reusable goods or such goods be provided to an existing or new business or social enterprise with a strong social ethic.

7.10.6 Household chemicals - Many properties, domestic garages and sheds contain chemical cocktails of out-of-date, unwanted and often unknown pots and bottles of chemicals, herbicides, pesticides and other substances, which are all potentially detrimental to the environment if not properly controlled and disposed of correctly.

Council conducts an annual Household Chemical CleanOut program in conjunction with the NSW EPA where residents can bring their unwanted household items to a designated collection. Here, trained, skilled contractors receive, assess and pack for transport and destruction the range of products surrendered. However, the community are seeking a more permanent facility.

Purpose-built, fully enclosed and ventilated storage sheds are available for containing chemicals prior to their assessment by experts. Re-locatable hazardous goods storage units are available and may require a Development Application and approval from the EPA.

Recomendations

31. Council needs to undertake improved promotion of the Waste Minimisation Centre location, services and cost in addition to implementing improved road signage.
32. Investigate reconfiguration of the existing WAMI in the short-term to offer an expanded drop-off area for low toxic problem wastes as defined by the NSW EPA, including gas bottles/fire extinguishers, paint, lead acid batteries, fluorescent tubes, smoke detectors and used motor oil.

33. Council should apply to the NSW EPA for grant funding as part of ‘Waste Less Recycle More’ funding initiative to provide new and upgrade existing drop-off facilities for low toxic problematic waste, including lead acid batteries, gas bottles, paint, fluorescent tubes and smoke detectors.

34. Council enter into negotiations with SEROC/SERRG and DHL in relation to providing a permanent e-waste (computer, peripherals and televisions) collection point at the WAMI.

35. Council support SEROC/SERRG to coordinate a regional tender for the collection and processing of mattresses.

36. Council provide expanded facilities at the WAMI for the collection and storage of mobile phones, toner cartridges, scrap metal, used chemicals, clothing/textiles and unwanted but re-useable household items.

37. As part of the reconfiguration of the existing WAMI due consideration be given to finding an alternative location for the operation of the Men’s Shed until such time as a Master Plan and new site are developed when co-location could be complementary, if the Men’s Shed was involved in the repair and maintenance of the donated unwanted household goods.

38. That as part of the refurbishment of the existing WAMI and/or construction of a new facility a weighbridge be installed for accurate monitoring of waste flows.

39. That a DrumMuster compound be established for used plastic agricultural containers that have been triple rinsed and are free from residual liquid.

40. Council in conjunction with LGA, SEROC and SERRG lobby the federal government to extend the EPR program to all e-waste, mattresses, gas bottles, fire extinguishers, paint and smoke detectors.

41. Council support and promote the introduction of a regional mattress recycling program.

42. Conduct a feasibility study into the various operating models in other locations to assist in determining the preferred structure to suit Council’s risk profile in relation to the future operation of a reuse shop.

43. Engage with local charities and undertake an Expression of Interest with the local community to determine the level of interest in the operation of a reuse shop at a Council-provided facility as social enterprise.

44. For the longer term, Council needs to develop a Master Plan for an integrated larger site that can accommodate all recycling/reuse activities in the same location. It may also incorporate the proposed Sustainability Hub and Men’s Shed.
7.11 Bulky waste

Currently, 60% of the urban respondents use the service once per year. However, in medium-density areas with a high level of transient tenants, dumped rubbish on the nature strip for long periods of time is the norm, as Council currently offers two scheduled collections per year in March and September.

In rural areas the service was used by 56% of respondents, with the majority (75%) using it twice per annum probably due to the convenience of having three rural locations where items can be delivered on scheduled days twice per year. There should be no change to this service level.

Council’s contractor currently recovers metals and garden waste post collection. Council should also promote the concept of ‘secondhand Saturday/Sunday’ or trash-and-treasure days to encourage reuse, with a clean-up collection arranged for the week following the activity to remove any unwanted and unsold items.

Recommendations

45. Maintain the twice per annum bulky waste service for single households in the urban areas, with additional services on a fee for service basis.

46. Maintain the service in medium-density areas to two collections per year in March and September.

47. Maintain the current service level to rural community of two scheduled services per year.

48. Council promote trash-and-treasure days or ‘second-hand Saturday/Sunday’ to encourage reuse with the clean-up service booked immediately following the activity on request.

49. Continue to review opportunities to maximise diversion of hardwaste from landfill.
8. Other services and related issues

8.1 Bio-solids

Council currently generates and stockpiles significant quantities of bio-solids from the Council sewerage treatment plant. This matter is organic and is suitable as input to composting.

Recomendations

50. That Council seek expression of interest (EOI) from interested parties to receive and process from the Queanbeyan Sewerage Treatment Plant:
   - 4,000 tonnes stockpile of bio-solids; and
   - 850 tonnes per annum of bio-solids.

51. That the information gained from the above EOI be used to inform a business plan for the on-going management of bio-solids as part of the future management of organics.

8.2 Litter management

Council actively participates in a range of activities, programs and campaigns including Don’t Be a Tosser, Clean Up Australia Day and the Tidy Towns program promoted by Keep Australia Beautiful. There has been an increase in the misuse and dumping of shopping centre trolleys which warrants greater engagement by all supermarkets to install coin operated trolleys in an effort to minimise incorrect behavior.

Council recently installed public-place recycling bins in Crawford Street and at the Sensory Gardens.

Recomendations

52. Council continue to support and promote litter-reduction initiatives such as Clean up Australia Day and Don’t be a Tosser campaign.

53. Council in conjunction with LGA, SEROC and SERRG lobby for the banning of plastic shopping bags in favour of reusable bags and that all supermarkets only use coin operated trolleys to reduce community misuse and dumping.

54. That Council encourage the proprietors of Wanniassa Street fast food outlets to institute more intensive litter campaigns in the wider vicinity of their own outlets.

8.3 Container Deposit Scheme (CDS)

Should this scheme be adopted by government, an opportunity may exist for the Council WAMI to be a depot, subject to the model to be implemented. Given the community is aware of the WAMI, and many already drop-off excess recyclables, the establishment of a formal depot appears to make sense. A decision is expected late 2013.

Recomendation

55. Council in conjunction with LGA, SEROC and SERRG should monitor developments in relation to the implementation of a national Container Deposit Scheme.
8.4 Illegal dumping

The community is concerned about the visual amenity of the area when household furniture or motor vehicles are dumped on roads, verges and nature strips. The community, real estate agents, strata managers and waste contractors indicate the problem is increasing.

There are two types of illegal dumping behaviour:

1. Residents dumping household goods inappropriately in residential areas. This includes in or next to public-place litter bins, residents dumping bulky waste on the nature strip when no collection is due, and overflowing charity clothing bins.

2. Dumping household or business waste to avoid tipping fees, most commonly in bushland or isolated areas.

Group 1 is often ‘one off’ offenders that are not aware that their behaviour is illegal and have not taken the time to look into more suitable disposal alternatives. These offenders should be targeted with awareness of the alternatives, such as bulky waste collection dates.

Group 2 offenders often decide that the risk of getting caught is less than the cost of the avoided tip fees. They require enforcement and penalties to reduce or modify behaviour. A number of other councils and regional groups of councils have developed ‘RID Squads’ – teams of council rangers dedicated to pursuing and reducing illegal dumping. The group could work either as a council group, sub-regional group in association with ACT (given the proximity of boundaries) or as a regional group.

Recommendations

56. Council contact the ACT Government, neighbouring councils and appropriate authorities to ascertain the level of interest in working cooperatively as a dedicated group of officers in tackling illegal dumping and pursuing offenders.

57. Council should maintain a database and map of illegal dumping incidents to inform appropriate interventions for managing and reducing illegal dumping and to identify incidences of repeat illegal dumping activity.

58. Council should seek funding from the Waste Less Recycle More funding package for a waste compliance officer.

59. Install motion activated cameras in target ‘hot spots’ in an effort to reduce activity.

60. Encourage more dialogue between real estate agents/ environmental health officers and rangers in the quest to better understand and respond to incidents.

61. Provide real estate agents and strata managers with information packs for new tenancies and home-owners to ensure they are aware of the services and penalties for non-compliance in particular illegal dumping.

62. Undertake a media campaign to raise awareness of the issue of dumping and the penalties and enforcement activities of council rangers.
8.5 Away from home recycling

Council has installed new attractive public place recycling enclosures in the Crawford Street shopping precincts and at the Sensory Gardens. These opportunities need to be expanded and complement efforts by the private sector including recycling stations provided in the food court at the Riverside Plaza.

Council has developed a sustainable event guide and undertaken training to ensure it is leading by example and practising waste-wise principles at all events. Waste-wise event principles should be utilised for all Council events and should be included as a conditions of hire of any Council facility, park or public arena.

The community is seeking Council to provide opportunities for recycling at major sporting events and activities by providing recycling infrastructure. Council, in consultation with its contractor, should provide a dedicated stock of bins and hoods, which can be provided on request by event organisers.

Recommendations

63. Expand the recycling stations to include more shopping precincts, pool and sports fields and parks.

64. Apply waste-wise event management principles as a requirement for events organised at Council venues.

65. Offer recycling opportunities at major sporting events and activities.

66. Council consider the purchase of specific bins, hoods and signage to clearly differentiate what products go where for use at events and sporting functions.

8.6 Education

Council has undertaken a range of community outreach activities, both actively through engaging KAB to undertake specialist school education and passively, with truck signage and information at Council events. Standard imagery has been developed to brand all waste management and resource-recovery activities. However, as we all receive and process information differently, a range of mediums for all ages and demographics is required. Information on the systems, bin options, costs and how to use the system correctly must be provided.

On-going emphasis and increased budget allocation and resources are needed to improve and reduce the existing high levels of contamination in the kerbside recycling bins and to maintain the low levels in the garden waste bins. Calendars with service dates and a fridge magnet, bin stickers, posters, advertisements and community outreach are just some of the common methods used.

Council should review any contractual obligations with the contractor and ascertain how the parties can work together to maximise the impact and opportunity to inform and educate the community. Council needs to aggressively implement a recycling bin contamination policy to reduce the high levels of contamination, including engaging a bin auditor to inspect every bin prior to collection on several occasions as part of a concerted recycling contamination and awareness campaign, with the results published.

Many in the community are seeking more knowledge and skills in connection with responsible organics management via training sessions on how to compost, set up worm farms, keep chooks or avoid food waste. The community is also seeking subsidised worm farms and compost bins for those who complete training or supply at wholesale or cost price for the broader community.
67. Employ a full-time waste education officer or project officer to assist with community education.

68. Continue to engage Keep Australia Beautiful (KAB) to deliver the annual school education program to all public and private schools within the Council area.

69. Market test all graphics and educational material to gauge community understanding prior to release.

70. Continue to provide education in a range of mediums for all ages and demographics.

71. Develop bin stickers for placement on either the outside of all bin lids or front of bin.

72. Develop, promote and implement training opportunities in organics management including low waste gardening, composting and worm farming.

73. Provide subsidised worm farms and compost bins for those households participating in the above training and seeking to manage organics onsite.

74. Offer the broader community worm farms and compost bins at cost.

75. Promote avoidance of food waste by community outreach in addition to passive “Love Food Hate Waste” initiative by the NSW Government.

76. Promote businesses and solutions for people wishing to donate or recycle items.

77. When the new collection contracts are prepared in 2014, the successful tenderer should be required, as part of their contractual obligations, to provide a fixed annual fee towards education to implement and support a range of initiatives to aid in community education and understanding of any recycling service.

8.7 Commercial and Industrial

Council currently provides limited waste and recycling services to this sector, based on the same offering as households. Council needs to assess its capability to offer multiple 240L bin services where needed.

A number of commercial companies run organics collection programs providing regular food waste collections to restaurants, clubs, government departments, shopping centres and offices. Council should seek to support these efforts by promoting their services.

Council has supported the extension of the ACTSmart Business program to the business sector of Queanbeyan. 25 places were offered in 2012, this was increased by another 25 places in 2013. Council should develop, prepare and profile case studies of participants, as currently there is little recognition of this program.
The NSW EPA Sustainability Division has recently launched the Bin Trim and Sustainability Advantage programs, where government assists in offsetting the costs of engaging accredited personnel to provide assistance, guidance and direction to businesses in reducing waste output and reducing operating costs. Council staff can be trained to administer the Bin Trim Program. These initiatives can complement the existing ACTSmart program.

Recommendations

78. Council should conduct a waste audit of commercial bins to determine weight and composition and subject to the findings undertake a review of fees and charges if bins are found to be substantially heavier than residential bins to prevent cross subsidisation.

79. Explore opportunities to forge greater links with the business community.

80. Promote waste collection services to the business community by offering multiple lifts of 240L bins.

81. During the negotiations for the next collection contract, seek support from tenderers as to how to provide greater support to the business community.

82. Council to promote recycling services offered to the commercial and industrial sector including the new and emerging organics collection services as well as traditional services for cardboard and glass.

83. Council should continue to promote and support the free ACTSmart Business Program as currently there is little of recognition of the program.

84. Council promote the Bin Trim and Sustainability Advantage programs to the business community as free or government-assisted programs.

85. Support the training of a Council staff member in the Bin Trim tool and then undertake outreach to the business community on waste management.

8.8 Regional collaboration

Council is a member of the South East Region Recycling Group (SERRG). It should share information, exchange views and opinions and work regionally and cooperatively where it is cost advantageous to do so or economies of scale are required.

Recommendations

86. Continue to work collaboratively within the region for the benefit of the members to gain economies of scale, improved operational efficiencies and improved resource recovery outcomes.

87. In partnership with SERRG & SEROC consider the opportunity of establishing a Sustainability Hub to co-locate composting, recycling, resource recovery, reuse, repair, education centre with demonstration gardens showcasing renewable energy and water wise plants with on-site organic management and encouraging new small business opportunities.
9. Strategic framework

**Vision:** Working towards zero waste.

**Mission:** To educate and support the community to reduce and manage waste in a more sustainable way for the benefit of current and future generations.

**Strategy:** Maximise resource recovery and minimise waste generation, treatment and disposal through the use of economic instruments and community education in accordance with best-practice principles and demonstrating compliance with:

- Ecological sustainability;
- The waste management hierarchy;
- The need for continuous improvement;
- The need for leadership and innovation;
- Transparency of pricing policies;
- Social equity;
- Compliance with statutory obligations; and
- Benchmarking progress.

**Goals:**

1. **Waste diversion** – Increase diversion of materials from landfill to reduce greenhouse gas emissions and climate change impacts by:
   - a) providing appropriate waste and resource-efficiency infrastructure;
   - b) encouraging the recovery of materials for beneficial and highest order reuse;
   - c) encouraging recovery of low toxic problematic products that pose a risk to the environment by providing convenient central facilities for their recovery; and
   - d) improving the use of existing and future waste management services and infrastructure.

2. **Littering and illegal dumping** – Reduce anti-social behaviour by:
   - a) a range of measures focusing on education and enforcement; and
   - b) providing appropriate services and infrastructure.

3. **Community and stakeholder engagement** – Increase the community’s knowledge, skills and actions in relation to waste-avoidance reduction, reuse and recycling practices by:
   - a) Working with the community through education and information in regards to waste avoidance; and
   - b) Working with all stakeholders to encourage the highest use of resources while reducing waste generation.
4. **Partnerships** – Support and complement the work of local and regional neighbours, and processing and collection contractors with the aim of providing a united and consistent message to our community.

5. **Regional planning** – Provide on-going support and cooperation in relation to regional or sub-regional planning.
   a) Support coordination of waste management infrastructure and services to gain improved resource-recovery outcomes.
   b) Encourage resource sharing as appropriate to gain improved efficiencies and cost savings for services.

**Diversion Targets:** This strategy seeks through continuous improvement to achieve the following kerbside diversion targets from a baseline of 41% in 2013:
- 45% by 2015, through greater capture of recyclables;
- 64% by 2016, following the introduction of the food waste program; and
- >70% by 2023, by processing the general waste bin through an Advanced Waste Treatment facility.

**Service Performance targets:** Seek to reduce the contamination rate in the recycling stream from a baseline of 20% to:
- 10% by 2016; and
- 7% by 2023.

**Strategic review:** Regular systematic visual, physical and administrative audits should be conducted and compared in the same climatic season, using the same method to allow trends to be assessed and direct comparisons made to determine performance and identify issues that need to be addressed over time.

As the legislative framework is constantly evolving and requires constant monitoring, it is prudent to undertake regular reviews of this strategy and the targets to determine how any change in policy will affect Council and community performance.

As progress towards the targets will not be linear and legislative and regulatory reviews may alter the current operating framework a significant midterm review should occur at five years with minor review occurring at three and eight years.
9.1 Recommendations

The following 87 recommendations contained in this strategy are detailed below grouped by common area.

Recycling

1. Improve recycling recovery through increased awareness/education programs.
2. Develop and/or implement a recycling bin contamination policy.
3. Where habitual offenders continually contaminate recycling, revoke the recycling service.
4. Council, in conjunction with the contractor, engage a bin auditor to routinely inspect every recycling bin prior to collection on multiple occasions to identify and allow targeted communication to offending households.
5. Where additional recycling bin capacity is required, Council provide as an option a 360L recycling bin at minimal additional charge.
6. In preparing for the next waste collection contract, specify that the collection fleet must be capable of collecting bins ranging 240–360L for recycling.

Recycling processing

7. Maintain the current contractual arrangements with ACT NOWaste and Remondis in relation to acceptance and processing of all recyclables generated by Council.

Garden waste

8. The existing 240L garden waste bin should remain the only size option due to potential weight issues with bin usage.
9. Where additional garden bin capacity is required, Council provide additional 240L bin on a cost recovery basis.

Garden waste processing

10. That Council seek expressions of interest from interested parties to:
   • process the existing stockpile of 7,000–10,000m³ of garden waste into grades suitable for sale
   • receive and process the estimated 3,000 tonnes garden organics delivered to the WAMI
   • Receive and process the anticipated 1,800 tonnes of garden waste arising from the garden organics kerbside collection

11. That the above information informs the development of a comprehensive business plan to consider the full range of options, including cost–benefit analysis and risk profile in relation to:
   a) options for collection, transport of the self-hauled loads and
   b) processing and marketing of the finished product from both the self-hauled and existing garden waste collection

12. As a matter of priority, Council should utilise the information gained from the EOI process above to inform the development of a comprehensive business plan, including a full cost and risk assessment.
13. Council promote the sale of mulch and matured processed green waste to the community
Food waste

14. As a matter of priority, Council undertake the development of a comprehensive business plan including a full cost–benefit analysis and risk profile in relation to the exploring the options for collection, transport, processing and marketing of the finished product from the future food and garden waste collection.

15. Promote avoidance of food waste by community outreach in addition to supporting the passive “Love Food Hate Waste” program initiative of the NSW Government.

16. Conduct a trial to ascertain the take-up rate, contamination rates and issues associated with food/green waste collection and services.

17. Introduce a source-separated food waste collection service as part of the 240L garden waste collection service for all households with an existing garden waste bin.

18. Provide each householder with a new 240L mobile garbage bin, kitchen caddy and on-going supply of bio-bags.

19. Consider both local and regional opportunities when applying for Apply to the state government ‘Waste Less Recycle More’ grant funding to offset the cost of implementation based on $35/Hhld and $20,000 for waste audit.

20. Council offer an ‘opt in’ service for medium-density housing where the bodies corporate nominate their building to be part of the program.

21. Council review the garden/food program including conducting a domestic waste audit to quantify participation, contamination, diversion, recovery and carbon reduction impact. Residents should be surveyed regarding collection frequency to determine if changes should be introduced to the garden/food and general waste bins.

22. That council seek expressions of interest from interested parties to receive and process the estimated 500 tonnes of combined food and garden waste arising from the new garden organics kerbside collection service to be introduced in 2015.

Rural waste services

23. Council should offer the rural community:
   - an optional 240L yellow lid recycling bin and 240L red lid garbage service serviced on alternate fortnights; or
   - an optional recycling only service for those properties with alternative waste arrangements.

24. That the recycling drop-off facility at Fernleigh Park be closed following introduction of the above services.

General waste

25. Council offer the community an 80L general waste bin option for low waste generators for a reduced waste charge.

26. In preparing for the next waste collection contract, Council needs to specify that the collection fleet must be capable of collecting bins ranging from 80–240L for general waste.

27. Council specify that fuel efficient vehicles would be favourably considered in the next waste collection contract.
General waste disposal

28. That Council release an EOI to interested parties in relation to both the receipt and processing of residual waste arising from Council kerbside general waste collections.

Bin configuration and technology

29. Council communicate to the community the range of waste, recycling and garden organics bin sizes and fee options available.

30. Council in preparing for the next contract require the provision of Radio Frequency Identification Device (RFID) tags on all new bins and the appropriate hardware and software for monitoring by both Council and the contactor. Maintenance of the database to be agreed between the parties.

Waste Minimisation Centre

31. Council needs to implement improved road signage to identify the location of the existing Waste Minimisation Centre at Lorn Road. Council needs to undertake improved promotion of the Waste Minimisation Centre location, services and cost in addition to implementing improved road signage.

32. Investigate reconfiguration of the existing WAMI in the short-term to offer an expanded drop-off area for low toxic problem wastes as defined by the NSW EPA, including gas bottles/fire extinguishers, paint, lead acid batteries, fluorescent tubes, smoke detectors and used motor oil.

33. Council should apply to the NSW EPA for grant funding as part of ‘Waste Less Recycle More’ funding initiative to provide new and upgraded existing drop-off facilities for low toxic problematic waste including lead acid batteries, gas bottles, paint, fluorescent tubes and smoke detectors.

34. Council enter into negotiations with SEROC and DHL in relation to providing a permanent e-waste (computer, peripherals and televisions) collection point at the WAMI.

35. Council support SEROC/SERRG to coordinate a regional tender for the collection and processing of mattresses.

36. Council provide expanded facilities at the WAMI for the collection and storage of mobile phones, toner cartridges, scrap metal, used chemicals, and unwanted but reusable household items, clothing and textiles.

37. That as part of the refurbishment of the existing WAMI and/or construction of a new facility a weighbridge be installed for accurate monitoring of waste flows.

38. As part of the reconfiguration of the existing WAMI that due consideration be given to finding an alternate location for the operation of the Men’s Shed until such times as a master plan and new site are developed when co-location could be complementary if the Men’s Shed was involved in the repair and maintenance of the donated unwanted household goods.

39. That a DrumMuster compound be established for used plastic agricultural containers that have been triple rinsed and free from liquid residual.
40. Council in conjunction with LGA, SEROC and SERRG lobby the Federal Government to extend the EPR program to all e-waste, mattresses, gas bottles, fire extinguishers, paint, batteries and smoke detectors.

41. Council support and promote the introduction of a regional mattress-recycling program.

42. Conduct a feasibility study into the various operating models in other locations to assist in determining the preferred structure to suit Council’s risk profile in relation to the future operation of a reuse shop.

43. Engage with local charities and undertake an Expression of Interest with the local community to determine the level of interest in operation of a reuse shop at a Council-provided facility as social enterprise.

44. For the longer term, Council needs to develop a Master Plan for an integrated larger site that can accommodate all recycling/reuse activities in the same location. It may also incorporate the proposed Sustainability Hub and Men’s Shed.

**Bulky waste**

45. Maintain the bulky waste service to twice per annum for single households in the urban areas with additional services on a fee for service basis.

46. Maintain the service in medium-density areas of two collections per year in March and September.

47. Maintain the current service level to rural community of two scheduled services per year.

48. Council promote trash-and-treasure days or ‘second-hand Saturday/Sunday’ to encourage reuse, with the clean-up service booked immediately following the activity on request.

49. Continue to review opportunities to maximise diversion of hard waste from landfill.

**Bio-solids**

50. That Council seek expression of interest (EOI) from interested parties to receive and process from the Queanbeyan Sewerage Treatment Plant:
   - 4,000 tonnes stockpile of bio-solids; and
   - 850 tonnes per annum of bio-solids.

51. That the information gained from the above EOI be used to inform a business plan for the on-going management of bio-solids as part of the future management of organics.

**Litter management**

52. Council continue to support and promote litter reduction initiatives such as Clean up Australia Day and Don’t be a Tosser campaign.

53. Council in conjunction with LGA, SEROC and SERRG lobby for the banning of plastic shopping bags in favour of reusable bags and that all supermarkets only use coin operated trolleys to reduce community misuse and dumping.

54. That Council encourage the proprietors of Wanniassa Street fast food outlets to institute more intensive litter campaigns in the wider vicinity of their own outlets.
Container Deposit Scheme (CDS)

55. Council in conjunction with LGA, SEROC and SERRG should monitor developments in relation to the implementation of a national Container Deposit Scheme.

Illegal dumping

56. Council contact the ACT Government, neighbouring councils and appropriate authorities to ascertain the level of interest in working cooperatively as a dedicated group of officers in tackling illegal dumping and pursuing offenders.

57. Council should maintain a database and map of illegal dumping incidents to inform appropriate interventions for managing and reducing it and to identify incidences of repeat illegal dumping activity.

58. Council should seek funding from the Waste Less Recycle More funding package for a waste compliance officer.

59. Install motion activated cameras in target ‘hot spots’ in an effort to reduce activity.

60. Encourage more dialogue between real estate agents/health inspectors and rangers in the quest to better understand and respond to incidents.

61. Provide real estate agents and strata managers with information packs for new tenancies and home-owners are aware of the services and penalties for non-compliance in particular illegal dumping.

62. Undertake a media campaign to raise awareness of the issue of dumping and the penalties and enforcement activities of council rangers.

Event waste management Away from home recycling

63. Expand the recycling stations to include more shopping precincts, pool and sports fields and parks.

64. Offer recycling opportunities at major sporting events and activities.

65. Apply waste-wise event management to all events organised at Council venues.

66. Council consider the purchase of specific bins, hoods and signage to clearly differentiate what products go where for use at events and sporting functions.

Education

67. Employ a full-time waste education officer or project officer to assist with the roll out of community education.

68. Continue to engage Keep Australia Beautiful to deliver the annual school education program to all public and private schools within the council area.

69. Market test all graphics and educational material to gauge community understanding prior to release.

70. Continue to provide education in a range of mediums for all ages and demographics.

71. Develop bin stickers for placement on either the outside of all bin lids or front of bin.

72. Develop, promote and implement training opportunities in organics management including low waste gardening, composting and worm farming.
73. Provide subsidised worm farms and compost bins for those households who participate in the above training and seeking to manage organics onsite.

74. Offer the broader community worm farms and compost bins at cost.

75. Promote the State Government ‘Love Food Hate Waste’ program and website.

76. Promote businesses and solutions for people wishing to donate or recycle items.

77. When the new collection contracts are prepared in 2014, the successful tenderer should be required to provide a fixed annual fee towards education to support a range of initiatives that aid in community education and understanding of the entire waste service.

**Commercial and Industrial**

78. Council should conduct a waste audit of commercial bins to determine weight and composition and subject to the findings undertake a review of fees and charges if bins are found to be substantially heavier than residential bins to prevent cross subsidisation.

79. Explore opportunities to forge greater links with the business community.

80. Promote waste collection services to the business community by offering multiple lifts of 240L bins.

81. During the negotiations for the next collection contract, seek support from tenderers as to how to provide greater support to the business community.

82. Council to promote recycling services offered to the commercial and industrial sector including the new and emerging organics collection services as well as traditional services for cardboard and glass.

83. Council should continue to promote and support the ACTSmart Business Program, as currently recognition of the program is low.

84. Council promote the Bin Trim and Sustainability Advantage programs to the business community as free or government-assisted programs.

85. Support the training of a Council staff member in the Bin Trim tool and then undertake outreach to the business community on waste management.

**Regional collaboration**

86. Continue to work collaboratively within the region for the benefit of the members to gain economies of scale, improved operational efficiencies and improved resource recovery outcomes.

87. In partnership with SERRG & SEROC consider the opportunity of establishing a Sustainability Hub to co-locate composting, recycling, resource recovery, reuse, repair, education centre with demonstration gardens showcasing renewable energy and water wise plants with on-site organic management and encouraging new small business opportunities.
9.2 Action Plan

Based on the recommendations outlined above, the Action Plan on the following pages outlines the priority required for 74 actions for Council to comply with the strategy. The Action Plan will assist Council in business planning and should be reviewed annually, costed and incorporated into the forward planning estimates and operational budget. The shading denotes the year/s the action should be implemented by Council and priority refers to the timeframe for action:

- Continuous (C) – existing or new activities for the life of the strategy.
- High (H) – within two (2) years.
- Medium (M) – within three (3)–five (5) years.
- Low (L) – within five–10 years.
### Table 10 – Action plan 2013–2023

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<td>Close the recycling drop-off facility at Fernleigh Park following introduction of the above services</td>
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<td>Offer the community an optional 80L general waste bin for low waste generators at a reduced waste charge – linked to 2015 contract</td>
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<td>Improve recycling recovery through increased awareness/education programs – endeavour to capture 50% of current recyclables in general waste bin and reduce contamination to &lt;10%</td>
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<td>Develop and/or implement a recycling bin contamination policy which can revoke service where there are serious and continual issues</td>
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<td>Council engage a bin auditor to routinely inspect every recycling bin prior to collection to identify offending households (earlier if funds permit)</td>
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<td>Where additional recycling bin capacity is required, provide as an option a 360L recycling bin at minimal additional charge.</td>
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<td>Maintain the current contractual arrangements with ACT NOWaste and Remondis in relation to acceptance and processing of all recyclables generated by Council.</td>
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<td>Where additional garden waste bin capacity is required, Council provide additional 240L bin on cost-recovery basis</td>
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<td>Develop a comprehensive business plan to consider all options, costs and risks in relation to collection, transport, processing and marketing of the finished product from both the self-hauled and existing garden waste collection.</td>
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<td>Promote mulch sales to the community</td>
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**Garden and food waste**

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<td>Undertake a comprehensive business plan to consider the full range of options, costs and risks for a combined food and garden waste service</td>
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<td>Apply to the State Government ‘Waste Less Recycle More’ grant funding to offset the cost of implementation based on $35/Hhld and $20,000 for waste audit</td>
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<td>Conduct a trial to ascertain the take-up rate, contamination rates and issues associated with food/green waste collection and services.</td>
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<td>Council review trial by • conduct a waste audit to quantify participation, contamination, diversion, recovery and carbon reduction impact • conduct survey regarding collection frequency to determine if changes should be introduced to the garden/food and general waste bins</td>
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<td>16</td>
<td>Introduce a source-separated food waste collection service to all households with an existing garden waste bin</td>
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<td>17</td>
<td>Provide each householder with a new 240L ventilated MGB, kitchen caddy and supply of bio-bags – March 2015</td>
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<td>18</td>
<td>Engage a full-time waste education officer on contract for 12 months</td>
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<td>Offer an ‘opt in’ service for med-density housing where the body corporate nominate their building to be part of the program</td>
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<td>Install new and improved directional signage regarding the location of the WAMI</td>
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<td>Investigate reconfiguration of the existing site to offer an expanded drop-off area for low toxic problem wastes as defined by the NSW EPA – gas bottles/fire extinguishers, paint, lead acid batteries, florescent tubes, smoke detectors and used motor oil</td>
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<td>22</td>
<td>Apply for ‘Waste Less Recycle More’ funding grant funding to provide new and upgrade existing drop-off facilities for low toxic problematic waste</td>
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<td>Council enter into negotiations with SEROC and DHL in relation to providing a permanent e-waste (computer, peripherals and televisions) collection point at the WAMI</td>
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<td>Support SEROC/SERRG to coordinate a regional tender for processing of mattresses</td>
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<td>Provide expanded facilities at the WAMI for mobile phones, toner cartridges, scrap metal, used chemicals, unwanted but reusable household items, clothing and textiles.</td>
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<td>26</td>
<td>Investigate an alternative location for the operation of the Men’s Shed</td>
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<td>27</td>
<td>Install weighbridge for accurate data recording of all deliveries in and out of the facility</td>
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<td>28</td>
<td>Establish a DrumMuster compound for used plastic agricultural containers</td>
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<td>29</td>
<td>Lobby the federal government to extend EPR on all e-waste, mattresses, gas bottles, fire extinguishers, paint and smoke detectors</td>
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<td>30</td>
<td>Council support and promote the introduction of a regional mattress recycling program.</td>
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<td>31</td>
<td>Conduct a feasibility study into the various operating models in other locations to assist in determining the preferred structure to suit Council's risk profile in relation to the future operation of a reuse shop.</td>
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<td>32</td>
<td>Engage with local charities and undertake an EOI with the local community to determine the level of interest in operation of a reuse shop at a Council-provided facility as social enterprise</td>
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<td>33</td>
<td>Investigate an alternative larger site and develop a master plan for all recycling/reuse activities in the same location</td>
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<td><strong>Bulky waste clean-up service</strong></td>
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<td>34</td>
<td>Maintain bulky waste service to twice per annum for single households in the urban areas with additional services on a fee for service or 'pay as you go' basis</td>
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<td>35</td>
<td>Maintain bulky waste service in med-density areas to two per year</td>
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<td>Maintain the current service level to rural community of two scheduled services per year</td>
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<td>37</td>
<td>Promote trash-and-treasure days or second-hand Saturday/Sunday to encourage reuse</td>
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<td>38</td>
<td>Continue to review opportunities to maximise diversion of hard waste from landfill</td>
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<td></td>
<td><strong>Litter management</strong></td>
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<td>39</td>
<td>Council continue to support and promote litter reduction initiatives</td>
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<td>40</td>
<td>Council monitor developments re national CDS program.</td>
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<td>41</td>
<td>Contact ACT Government and local police to determine interest in working cooperatively as a dedicated group of officers in tackling illegal dumping and pursuing offenders.</td>
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<td>42</td>
<td>Seek funding if appropriate from ‘Waste Less Recycle More’ funding package</td>
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<td>43</td>
<td>Establish and maintain a database and map to identify incidences of repeat illegal dumping activity</td>
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<td>44</td>
<td>Install motion activated cameras in target ‘hot spots’ in an effort to reduce activity</td>
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<td>45</td>
<td>Work cooperatively with real estate agents ensuring all new tenancies and home-owners aware of the services and penalties</td>
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<td>46</td>
<td>Encourage ongoing dialogue between rangers, health surveyors, real estate agents and strata managers to reduce dumping incidents.</td>
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<td>47</td>
<td>Undertake a media campaign to raise awareness of the issue of dumping and the penalties and enforcement activities of Council rangers</td>
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<td>48</td>
<td>Apply waste-wise event management principles for events organised at Council venues.</td>
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<td>49</td>
<td>Provide recycling opportunities at shopping precincts, swimming pool, sports fields and parks</td>
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<td>50</td>
<td>Council consider the purchase of specific bins, hoods and signage to clearly differentiate what products go where for use at events and sporting functions.</td>
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| 51  | Prepare tender documents for a new waste collection contract for urban areas with variable bin size including:  
- General waste 80L–240L, recycling 240L–360L & garden organics 240L  
- Provide options based on existing and alternative destinations based on extra time/distance for:  
  - garden organics/food  
  - residual waste from general waste bin  
  - Seek prices to:  
    - deliver and service special event activities  
    - provide recycling services to C&I  
    - require a financial commitment to education  
    - include RFID for bins and vehicles  
    - fuel-efficient vehicles | H | | | | | | | | | |
| 52  | Issue an EOI for med/long-term waste processing options of residual waste | M | | | | | | | | | |
| 53  | Ensure contractual arrangements in place with ACT NOWaste/Remondis in relation to acceptance and processing of all recyclables | H | | | | | | | | | |
| 54  | That Council seek EOI from interested parties to:  
- process the existing stockpile of 7,000–10,000m³ of garden waste into grades suitable for sale  
- receive and process the estimated 3,000t garden organics delivered to the WAMI  
- Receive and process the anticipated 1800t of garden waste arising from the garden organics kerbside collection OR 3,500t garden/food waste from kerbside collection  
- 4,000t stockpile of bio-solids from QCC STP  
- 850tpa of bio-solids from QCC STP | H | | | | | | | | | |
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<td>55</td>
<td>Communicate to the community the range of bin sizes and fee options available</td>
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<td>56</td>
<td>Engage KABC to deliver the annual school education program to all public and private schools within the Council area</td>
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<td>57</td>
<td>Market test all graphics and educational material to gauge community understanding prior to release.</td>
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<td>Continue to provide education in a range of mediums for all ages and demographics</td>
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<td>59</td>
<td>Develop bin stickers for placement on either the outside of all bin lids or front of bin.</td>
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<td>60</td>
<td>Develop, promote and implement training in organics management including low waste gardening, composting, worm farming</td>
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<td>61</td>
<td>Provide subsidised worm farms and compost bins for those households attending training and seeking to manage organics on site</td>
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<td>62</td>
<td>Provide worm farms and compost bins at cost for the broader community</td>
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<td>63</td>
<td>Promote the State Government ‘Love Food Hate Waste’ program and website</td>
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<td>Promote businesses and solutions for people wishing to donate or recycle items.</td>
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<td>Regional collaboration</td>
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<td>65</td>
<td>Continue to work collaboratively within the region for the benefit of the region</td>
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<td>66</td>
<td>In partnership with SERRG &amp; SEROC, consider the opportunity for a Sustainability Hub to co-locate resource recovery, education facilities, reuse centre and small business opportunities</td>
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<td>Development Control Plans</td>
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<td>Develop a DCP for garbage storage areas for to ensure sufficient space and access for servicing</td>
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<td>Commercial and Industrial</td>
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<td>68</td>
<td>Conduct waste audit to determine weight and composition</td>
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<td>69</td>
<td>Review pricing policy based on audit results</td>
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<td>Promote waste collection services to the C&amp;I sector by offering multiple lifts of 240L bins</td>
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<td>Council to promote existing recycling and organics services offered to the C&amp;I sector</td>
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<td>Council continue to promote and support the Free ACTSmart Business Program</td>
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<td>73</td>
<td>Support the training of a Council staff member in the Bin Trim tool and then undertake outreach to the business community on waste management</td>
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<td>74</td>
<td>Council promote the Bin Trim and Sustainability Advantage programs to the business community as free or government-assisted programs</td>
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Appendix A – Definitions

**Australian Packaging Covenant** – The voluntary co-regulatory arrangement between industry and all levels of government. When individual organisations sign the covenant they agree to undertake certain actions to reduce waste and increase recycling. Those that do not sign the covenant are subject to penalty measures enforceable by state government.

**Commercial and industrial waste (C&I)** – Solid waste generated by the business sector as a result of institutional, commercial, manufacturing or industrial activity, as well as solid wastes created by state and federal government entities, schools and tertiary institutions. Does not usually include waste from construction and demolition (C&D) activities.

**Co-mingled collection** – Pick-up and transportation of mixed, dry, recyclable materials.

**Composting** – The process of controlled biological decomposition of organic wastes. Composting can take place on materials separated from the waste stream either at the source, in the initial stages of a recovery process such as backyard, neighbourhood and regional facilities, or it can be accomplished in large quantities in windrows, static piles and enclosed vessels.

**Construction and demolition waste (C&D)** – Waste arising from residential, civil and commercial construction and demolition activities, such as fill material (for example, soil), asphalt, bricks and timber. Does not include waste from the commercial and industrial waste stream.

**Diversion rate** – The percentage of the waste stream diverted from disposal.

**Domestic waste** – Waste produced from household dwellings usually placed on the kerbside for collection by a council or council contractors.

**Dry recyclables** – Recyclable materials, excluding organics and food.

**E-waste** – Any manufactured product containing electric or electronic components. Usually refers to computer equipment, such as desktop and laptop devices, monitors, printers etc., but also includes DVD and video players, MP3 players, televisions, lighting, electronic tools, toys, leisure and sporting equipment, medical equipment, industrial monitoring and control equipment and vending machines. Referred to as WEEE (Waste Electric and Electronic Equipment) in Europe.

**Extended Producer Responsibility (EPR)** – Manufacturers of consumer products should be responsible for the full lifecycle of their products, from original manufacturing to final disposal. EPR is also known as Product Stewardship, Manufacturer Responsibility or Cradle-to-grave.

**Garden organics** – Organics derived from garden sources, for example, grass clippings, tree prunings, etc.

**Gasification** – A process that converts waste under pressure at a high temperature (>700°C) into synthetic gas (syngas), which can then be used as a fuel. Syngas is a combination of carbon monoxide, hydrogen and carbon dioxide.

**Green waste** – A very broad term generally taken to mean vegetative organic matter generated in households or gardens but not including food waste. In a broader definition, it could include food waste and other organic material. Also referred to as garden waste, vegetation, green organics, yard waste or garden organics.
Hard waste collection – A periodic collection of material from households other than the regular garbage service. Usually comprises garden waste, large household items, furniture, etc. Also known as hard waste or bulky waste, which also refers to the material itself.

In-vessel composting – Composting in an enclosed container so that the biological decomposition of organic material can be controlled, thereby accelerating the decomposition process and capturing gases to reduce odours.

Kerbside recycling – System of recycling in which the generator segregates wastes according to material type and places them in containers on the kerbside for separate collection. Normally refers to domestic waste.

Landfill – A site for the disposal of garbage and other waste materials by burial. In their simplest form, a landfill is either a hole in the ground or a designated tipping area above ground. It may or may not be fenced, staffed or signposted. Sophisticated landfills usually have one or more weighbridges, sealed roads, lined and managed disposal cells, compactors and other plant, dust suppression equipment, fencing and signposts, gas recovery, leachate and stormwater treatment equipment, as well as other areas for disposing of separated wastes.

Materials Recovery Facility (MRF) – A facility at which recyclable materials are separated into individual commodities using a variety of mechanical and manual sorting techniques. In its basic, mechanised form, a MRF consists of a conveyor belt on which co-mingled recyclables are tipped at one end and, as the belt moves, items are removed according to type. Apart from picking by hand, mechanical separation methods include tumbling drums (trommels), magnets, optical sorters, rotating discs, blown air, inclined moving belts, vibrating trays and rubber flaps and other devices.

Municipal waste – Solid waste collected by or on the order of municipalities. It includes waste generated from domestic (household) premises and local government activities such as building and repairs, street-sweeping, litter and street tree-lapping. May also include some waste originating from commercial activities, office buildings, institutions such as schools and government buildings, and small businesses that use municipal services.

Organic waste – The part of the waste stream that solely comprises animal or vegetable matter and typically from which compost can be created. Typically it includes garden waste, untreated wood, vegetables, fruits, cereals, bio-solids, manures, fatty foods, meat, fish, etc.

Putrescible waste – Waste that decomposes, such as food scraps.

Recovery rate – The amount of material recovered from a product group as a percentage of overall consumption.

Refuse-derived fuel (RDF) – Fuel derived from either untreated waste or waste that has been treated and processed to give a cleaner burning fuel.

Renewable energy – Any source of energy that can be used without depleting its reserves.

Residual – Waste that requires handling in a disposal facility (for example, a landfill) and may comprise non-recyclable waste materials from a MRF or other processing facility or composting operation.

Source separation – Physical sorting of the waste stream into its components at the point of generation.
**Transfer station** – An intermediate facility for the disposal of garbage and other materials from typically small vehicles, which is then consolidated and transferred by way of larger trucks, for example transfer trailers, by road, or by rail, to a landfill or other facility for disposal or recycling.

**Waste Management Hierarchy** – The concept that waste should be dealt with according to a structure of actions of decreasing priority, starting with reducing it, then reusing it, then recycling it. In its simplest form, the Waste Management Hierarchy is often given as ‘Reduce, Reuse, Recycle’ but there are other variations including ‘Reduce, Reuse, Recycle, Dispose’, ‘Reduce, Reuse, Recycle, Recover and Residuals Management’, ‘Avoidance, Reuse, Recycling, Recovery of Energy, Treatment, Containment, Disposal’.

**Waste-to-energy (WtE)** – Recovery of energy in waste by heat exchange from hot combustion gases. It may be used for the generation of heat and electricity.