Waste Management and Minimisation Plan 2013

Christchurch City Council

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This Plan was adopted by the Christchurch City Council on 12 September 2013.

Contents

Part One — Introduction

Purpose of the Plan

This Waste Management Plan is a statutory plan that sits in a wider local policy and planning context – see figure below. National direction and the legal basis for this Plan is set by the New Zealand Waste Minimisation Act 2008 and the New Zealand Waste Strategy 2010. The Council actively works towards achieving its Community Outcomes, Sustainability Policy objectives and the waste minimisation targets by implementing a range of programmes that promote waste management and minimisation. These include the provision of waste disposal, reuse, recycling and composting services, education programmes, establishing bylaws and through regional collaboration.

Figure 1 — The Context of the Waste Minimisation and Management Plan

The New Zealand Waste Strategy 2010

This Plan has regard to the New Zealand Waste Strategy 2010 which provides direction to local government, businesses (including the waste industry), and communities on ways to:

- Reduce the harmful effects of waste
- Improve the efficiency of resource use

The Strategy emphasizes that territorial authorities must use their waste management and minimisation plans to guide their spending of their proportion of the waste disposal levy in ways that maximise opportunities to minimise waste. The Strategy no longer includes any national targets.

www.mfe.govt.nz/publications/waste/waste-strategy

Waste Minimisation Act 2008

The purpose of the Act is to *encourage waste minimisation and a decrease in waste disposal in order to protect the environment from harm; and provide environmental, social, economic and cultural benefits*.

Part 4 of the Act deals with responsibilities of territorial authorities in relation to waste management and minimisation, which must *promote effective and efficient waste management and minimisation within its district*. Part 4 also requires territorial authorities to develop and adopt a waste management and minimisation plan (WMMP). In addition the Act also regulates the national waste disposal levy provisions.

WMMP's are required to be completed following an assessment of future demand for waste collection, recycling, recovery, treatment and disposal services within the district (a Waste Assessment). Christchurch's Waste Assessment was considered by Council on 28 June 2012 as part of the review of the 2006 Waste Management Plan and which resulted in Council resolving that a new draft WMMP should be prepared, and consulted upon as provided for in the Waste Minimisation Act 2008.

The Waste Assessment which contains comprehensive information on waste minimisation and flows in the city can be viewed at www1.ccc.govt.nz/council/proceedings/2012/june/cnclcover28th/clause6.pdf

Other Statutes

Other statutes that are relevant to waste minimisation and management in a broader context include:

- Local Government Act 2002
- The Resource Management Act 1991
- The Hazardous Substances and New Organisms Act 1996
- The Climate Change Response Act 2002 (as far as it relates to disposal facilities such as Kate Valley regional landfill).
- The Health Act 1956

Council Bylaws

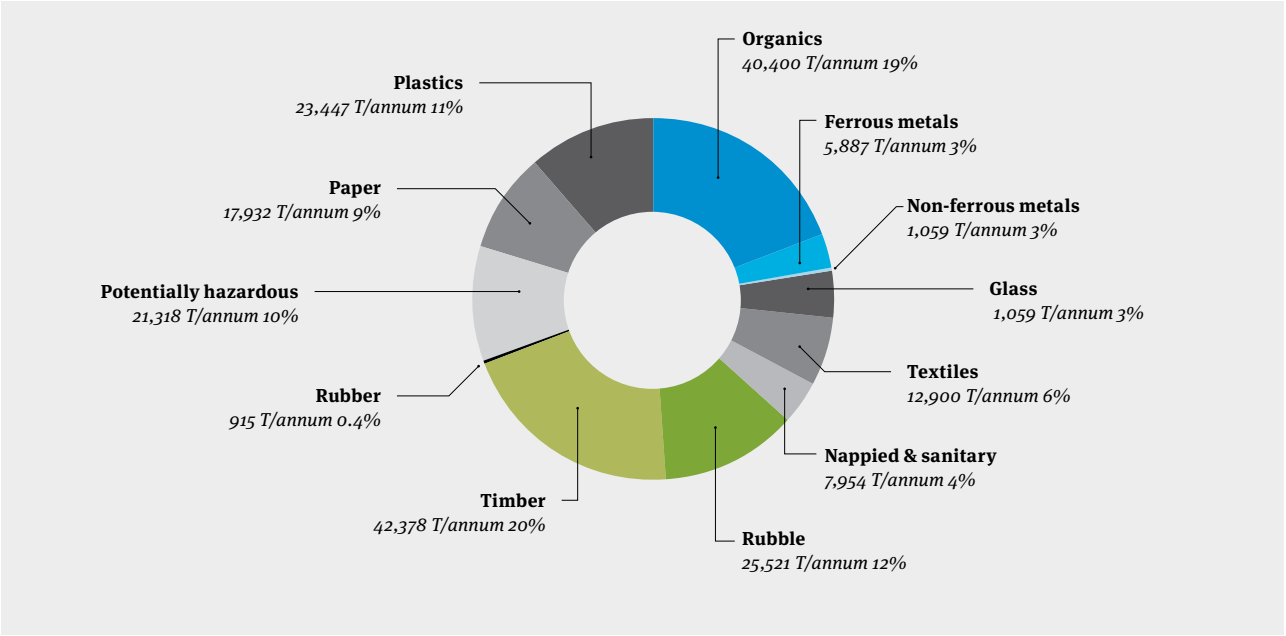
The following Council bylaws relate to waste minimisation and management:

- The purpose of the *Waste Management Bylaw 2008* (with accompanying Terms and Conditions), is to prevent the contamination of recoverable resources (including materials collected through the kerbside collection services) and to maximise the recovery of recyclable resources. It is also to ensure that waste is collected in a safe and efficient manner, and that waste does not cause a nuisance.
- The *Licensed Waste Handling Facilities Bylaw 2007* requires any operation that handles waste e.g. waste transfer stations, to be licensed.
- The *Cleanfill Licensing Bylaw 2008* requires sites receiving cleanfill materials to be licensed.

Current composition of waste and materials

More than 207,000 tonnes of waste was generated in Christchurch and disposed to landfill in 2011/12, or approximately 524 kilograms for each person in Christchurch. The primary composition of waste to transfer stations in Christchurch from July 2011 to June 2012 (in tonnes per annum) in Figure 2 below:

Figure 2 — Composition of waste to transfer stations in Christchurch from July 2011 to June 2012



Each person has an individual and societal responsibility for the waste they generate. While the Council can influence how waste is managed, it falls to the people and businesses of Christchurch to act in ways that avoid and minimise waste. The linkage between economic growth and waste production is well known and clearly is not a sustainable course to follow.

The challenge facing Christchurch residents and businesses is to reverse the trend of waste production, to weaken or break the link between economic growth and waste production. This requires a change both in attitude and behaviour. If the generation of waste cannot be avoided, waste should be viewed and managed as a resource to be reused, recycled, or recovered.

Working Together

Meeting the waste challenge is the responsibility of all in Christchurch: residents, business, organisations and government. From individual residents and businesses to Tangata Whenua to local, regional and national government, an integrated approach is required to bring about continued improvement in managing our waste.

As a territorial authority the Council's role is to act as a facilitator, helping the community to:

- create an environment to more effectively manage its resources,
- reduce the wastes produced by the community, and
- better manage the residual waste that the community produces.

The Council works in partnership with other territorial authorities in the Canterbury region to plan and implement waste minimisation programmes through the Canterbury Waste Joint Committee and its *Canterbury Regional Waste Management Agreement*. By active participation in the Joint Committee the Council works collaboratively with other district councils to identify and implement actions that promote and facilitate waste minimisation across the region. The Joint Committee, with the assistance of Environment Canterbury, also addresses regional coordination of the management of hazardous wastes generated in the region.

Producer responsibility is a key component of national waste minimisation planning and currently is a voluntary process under the Waste Minimisation Act 2008. Christchurch City through its membership of WasteMinz and participation in the Territorial Authorities Forum is part of local authority lobbying for expanded producer responsibility agreements under the Act.

The Council works with the Ministry for the Environment to address waste issues of local and national significance e.g. a collaborative approach to the collection of electronic wastes.

Part Two — Current Situation and Future Projections

2.1 Council waste management infrastructure and services

The Council has the following key waste management infrastructure in place:

- An organics processing plant for compostable kitchen and garden waste, producing valuable compost
- A materials recovery facility for sorting and recovery of recyclables
- A shop for used goods *(EcoShop)*
- Three refuse stations in the city *(EcoDrops)* at Metro Place, Styx Mill Road and Parkhouse Road, and various community waste separation and collection points on Banks Peninsula.
- A three-bin kerbside collection service comprising of an 80L green bin for organics, 240L yellow bin for recyclables, and a 140L red bin for rubbish, with enhanced options available.
- Kate Valley regional landfill for residual waste.
- Burwood Resource Recovery Park which was established to enable post earthquake building and construction material to be removed from demolition sites as soon as possible, and then be sorted, processed and recycled over a longer time period.

Recyclables collected at kerbside are dropped off at the Council's materials recovery facility in Parkhouse Road. The contractor operating the facility is tasked with finding markets for the sorted product.

Organics collected at kerbside is transported to an organics processing plant in Bromley. The material is processed and the product sold primarily to the agricultural market.

Rubbish collected at kerbside is dropped off to one of the three transfer stations in the city area, owned by Council but operated by contractors, and transferred to the regional landfill at Kate Valley.

For the Banks Peninsula area there are community drop off centre for recyclables and rubbish.

These facilities are supported by programmes targeted at resource efficiency and reducing waste, and include:

1. The Target Sustainability resource efficiency service which provides free support to help Christchurch businesses become more resource efficient through reducing waste and being energy and water efficient. The type of support depends on the business and includes:
    - Free resource efficiency advice for commercial building designs
    - Free resource efficiency advice for the operation of the business
    - Self help guides and tools
    - A hotline question service
    - An online Free Materials service.
    - Various informative Target Sustainability materials including case studies can be found on the website www.targetsustainability.co.nz.
2. An ongoing education and raising awareness service to increase participation and compliance with kerbside collections and general waste minimisation.
3. An in-house educational team focussing on programs aimed at schools. The programs have a holistic focus, taking into account the 5 Rs, being *Reduction; Reuse; Recycle; Recover, and Residual Management.*
4. Kate Valley Landfill is able to be visited by groups, travelling by bus only, and by appointment. Visits need to be booked well in advance by contacting Canterbury Waste Services on 03 359 1800.

Some of the key challenges which have emerged and are addressed in the Action Plan in Part Four, include:

- Recoverable material being placed in the (red) rubbish bin instead of in the green bin
- Seasonal spikes in arsenic readings in composted product due to treated timber and sawdust ash being put in green bins
- Getting key waste minimisation messages through to targeted groups
- Unauthorised relocation of wheelie bins

2.2 Weight and composition of waste to landfill from Christchurch

Under the Waste Minimisation Act 2008 (the Act), and previously the Local Government Act 2002, territorial authorities are responsible for promoting effective and efficient waste management and waste reduction practices. Pursuant to these responsibilities, Christchurch City Council has regularly measured the composition of waste being disposed of to landfill from the city, most recently in 2011/12. A summary of some key findings are included in this section of the Plan.

Based on weighbridge records from Kate Valley Landfill, a total of 207,485 tonnes of waste from Christchurch City was disposed of to landfill during the period July 2011 to June 2012. Of this total, 93% originated from the six transfer stations in Christchurch City. The other 7% was special wastes disposed of directly to landfill. Special loads taken directly to Kate Valley Landfill included wastewater plant screenings, quarantine waste, and treated industrial waste.

Waste flows, the locations of the transfer stations, and a guide to where each transfer station are analysed in the full 2011/12 Waste Assessment report which can be viewed at www1.ccc.govt.nz/council/proceedings/2012/june/cnclcover28th/clause6.pdf.

The primary compositions of waste disposed of at the six transfer stations in Christchurch and waste disposed of to Kate Valley Landfill from Christchurch City are presented in Table 1 below. The only difference between the two waste streams is the special waste disposed of directly to the landfill.

Table 1 — Weight and composition of waste to landfill

July 2011 to June 2012	Waste to transfer stations in Christchurch		Waste to Kate Valley Landfill from Christchurch	
Primary category	% of total	Tonnes per annum	% of total	Tonnes per annum
Paper	9.3	17,932	8.6	17,932
Plastics	12.2	23,447	11.3	23,447
Organics	21.0	40,440	19.5	40,440
Ferrous metals	3.1	5,887	2.8	5,887
Non-ferrous metals	0.5	1,059	0.5	1,059
Glass	4.0	7,735	3.7	7,735
Textiles	6.7	12,900	6.2	12,900
Sanitary paper	4.1	7,954	3.8	7,954
Rubble	13.2	25,521	12.3	25,521
Timber	22.0	42,378	20.4	42,378
Rubber	0.5	915	0.4	915
Special waste	3.4	6,544	10.3	21,318
TOTAL	100.0	192,712	100.0	207,486

'Timber' and 'Organics' were the largest components of the waste stream disposed of at the six transfer stations in Christchurch, comprising 22% and 21% respectively of the total weight. *The Cleanfill Licensing Bylaw 2008* banned timber from going to cleanfills after 2004, which has since resulted in an increase of timber going to landfill instead.

'Rubble' and 'Plastics' were the third and fourth largest classifications and comprised similar proportions of the total, approximately 12-13%.

Types of waste disposed to landfill

For each of the six transfer stations included in the survey programme, an analysis was made of the types of waste loads being disposed of at the facility.

Table 2 — Types of waste disposed of to landfill

Types of waste loads – July 2011 to June 2012	Tonnes/annum	Percentage of total weight to transfer stations	Percentage of total weight to Kate Valley Landfill
Construction & demolition	52,964	27.5	25.5
Industrial/commercial/institutional	58,336	30.3	28.2
Kerbside collections	55,056	28.5	26.5
Landscaping & earthworks	7,453	3.9	3.6
Residential	13,932	7.2	6.7
Special waste to transfer stations	4,972	2.6	2.4
SUBTOTAL TO TRANSFER STATIONS	**192,713**	**100.0**	**92.9**
Special waste direct to landfill	14,774		7.1
TOTAL TO LANDFILL	**207,487**		**100.0**

Approximately 25% of all waste disposed of to landfill from Christchurch is generated by construction and demolition activity. This does not represent all waste generated by construction and demolition activity in the city, as substantial quantities of demolition materials are disposed of to commercial cleanfill sites and Burwood Resource Recovery Park (See 2.6 below).

Waste from industrial/commercial/institutional activity comprised 28% of all waste to landfill and kerbside collections 26%. Kerbside collections included both Council and private collections of wheelie bins.

2.2.2 Comparison with results of 2008 survey programme

A similar survey programme of the overall composition of waste disposed of to landfill from Christchurch was undertaken in 2008. A comparison of the results of the two survey programmes is shown in Table 3 below. It has been assumed that the 2008 survey programme included only waste disposed of at transfer stations and not waste disposed of directly to landfill. The 2012 results are as shown for 'Waste to transfer stations in Christchurch' in Table 2.

The 2008 survey programme used ten waste classifications. To compare the results of the two survey programmes, classifications used for the 2012 surveys have had to be combined to match the ten categories shown in Table 3.

Table 3 — Comparison with 2008 waste to landfill

Categories	Percentage of total weight		Tonnes per annum to landfill	
	2008	2012	2008	2012
Paper and sanitary paper	14.4	13.4	34,824	25,886
Plastics	10.1	12.2	24,365	23,447
Organics – kitchen waste	22.7	11.6	55,227	22,278
Organics – greenwaste	15.0	9.4	36,335	18,162
Ferrous and non-ferrous metals	5.2	3.6	12,571	6,946
Glass	3.9	4.0	9,508	7,735
Textiles and rubber	6.7	7.2	16,156	13,815
Rubble	9.5	13.2	22,959	25,521
Timber	11.8	22.0	28,565	42,378
Special wastes	0.7	3.4	1,796	6,544
TOTAL	100.0	100.0	242,306	192,712

The total tonnage of waste to landfill from transfer stations in Christchurch was 20% less in 2012 than in 2008. This decrease in tonnage to landfill is associated with the global financial crisis of late 2008, which resulted in a decrease of waste to landfill of about 15-20% at most landfills in New Zealand. The decrease is also associated with Council's introduction of the three-bin kerbside collection system in 2009. The earthquakes of 2010 and 2011 have affected waste generation and disposal in various ways.

In some instances tonnages have gone down between 2008 and 2012 yet as a percentage it has increased. For instance with plastics the actual tonnages of plastics to landfill has decreased however the total amount of waste to landfill has decreased proportionally more than the plastics component resulting in the proportion of plastics as part of total waste increasing.

Rubble and timber to landfill has increased from 2008 - 2012 both in actual amount to landfill and percentage of waste stream. This reflects the increased amount of this material being disposed of as a result of earthquake damage, added to the tonnages already diverted away from cleanfill sites.

2.2.3 Comparison of disposal to landfill rates in Christchurch with some other districts in New Zealand

The per capita disposal of waste to landfill by residents of Christchurch was calculated for 2008 and 2012. These figures are compared to disposal figures from other local authorities previously surveyed by *Waste Not Consulting* in Table 4. The tonnage figures used do not include special waste disposed to landfill or cover material imported into the landfills.

Table 4 — Comparison with other New Zealand districts

Overall waste (excluding cover materials and special waste)	Population	Waste disposed — tonnes per annum	Tonnes per capita per annum
Westland District 2011	9,000	2,978	0.331
Waimakariri District 2010	46,900	15,770	0.336
Southland District 2011	28,900	9,917	0.343
Tauranga and WBoP District 2010	157,400	71,092	0.452
Napier City & Hastings District 2012	133,300	64,449	0.483
Gore District 2011	12,100	6,245	0.516
Christchurch City 2012	**367,700**	**192,712**	**0.524**
Rotorua District 2009	70,400	40,377	0.574
Invercargill City 2011	53,900	31,262	0.580
New Plymouth District 2010	72,300	46,952	0.630
Christchurch City 2008	**369,250**	**242,304**	**0.656**
Queenstown Lakes District 2011	28,200	19,060	0.676
Auckland Council 2010	1,463,000	1,174,078	0.803

2.3 Audit of Council's kerbside refuse collection (red-lidded wheelie bins)

The audit of Council's kerbside refuse collection involved two separate eight-day audits, in November 2011 and May 2012. For each audit, the contents of 192 red-lidded wheelie bins were sorted into 24 categories and weighed. The results of the two audits, in terms of the 12 primary categories, are shown in Table 5. The annual tonnage of each material is also shown.

Table 5 — Refuse bin audit results

Council's red-lidded wheelie bin collection	November 2011 % of total	May 2012 % of total	November 2011 Kg/bin	May 2012 Kg/bin	July 2011 – June 2012 Tonnes/annum
Paper	10.6	10.4	1.25	1.19	4,266
Plastics	13.8	14.4	1.62	1.65	5,702
Organic	33.8	44.0	3.96	5.03	15,689
Ferrous metals	2.1	2.3	0.25	0.26	898
Non-ferrous metals	2.0	0.8	0.23	0.09	572
Glass	2.9	4.6	0.35	0.53	1,530
Textiles	5.4	4.7	0.63	0.54	2,054
Sanitary	14.3	11.4	1.69	1.31	5,242
Rubble, concrete, etc	7.9	2.9	0.93	0.33	2,222
Timber	3.6	2.2	0.43	0.25	1,182
Rubber	0.3	0.3	0.03	0.04	127
Special waste	3.3	2.0	0.39	0.23	1,078
TOTAL	100.0	100.0	11.76	11.45	40,562

'Organic' material was the largest primary category of kerbside refuse in the red-lidded wheelie bins in both audits, comprising 34% of the total in the November 2011 audit and 44% of the total in the May 2012 audit. This equated to four to five kilograms in the average bin. Kitchen waste comprised 74% of organic material in November 2011 and 66% in May 2012. Greenwaste (both compostable and non-compostable) comprised 12% of organic material in November 2011 and 19% in May 2012.

'Plastics' was the second largest primary category in the May 2012 kerbside refuse audit and third largest in the November 2011 audit. In both audits, 'Plastics' comprised about 14% of the total. 'Sanitary' waste, which includes nappies, tissues, paper towels, and feminine hygiene products, was the third largest category in the May 2012 audit and second largest in the November 2011 audit.

2.4 Audit of Council's kerbside organic collection (green-lidded wheelie bins)

The audit of Council's kerbside organic collection involved two separate eight-day audits, in November 2011 and May 2012, on the same days as the kerbside refuse audit. For each audit, the contents of 242 green-lidded wheelie bins were sorted and weighed. Five categories were used for the November 2011 audit and six for the May 2012 audit. The results of the two audits are compared in Table 6. The annual tonnage of each material is also shown, based on contractor tonnage data for the period July 2011 to June 2012.

Table 6 — Organics bin audit results

Council's green-lidded wheelie bin collection	November 2011 % of total	May 2012 % of total	November 2011 Kg/bin	May 2012 Kg/bin	July 2011 – June 2012 Tonnes/ annum
Food waste	19.3	29.9	2.36	2.73	10,711
Compostable greenwaste	72.3	63.3	8.85	5.77	30,911
Non-compostable greenwaste	1.6	0.1	0.19	0.01	427
Timber, ash, and sawdust	0.1	1.3	0.01	0.12	282
Soil and rocks		3.7		0.34	1,910
Other contamination	6.7	1.7	0.82	0.16	884
TOTAL	100.0	100.0	12.23	9.13	45,125

The November 2011 audit took place during the peak period of organic waste generation. Nearly three-quarters (72%) of the contents of the green-lidded organic waste bins, almost 9 kg per bin, was classified as 'compostable greenwaste'. Although it was not measured separately, the auditors estimated that half to two-thirds of this material was lawn clippings. 'Food waste' was the second largest component, comprising 19% of the total.

The May 2012 audit took place during autumn after a long period of warm, dry weather. Nearly two-thirds (63%) of the contents of the green-lidded organic waste bins, almost 6 kg per bin, was classified as 'compostable greenwaste'. 'Food waste' was the second largest component, comprising 30% of the total.

2.5 Cleanfill sites

The Council's Cleanfill Licensing Bylaw 2008 (which replaced the 2003 cleanfill bylaw) regulates all cleanfill sites in the city, including the type of materials permitted. In the year July 2011 to June 2012 a combined total of 610,000 m3 (approximately 998,000 tonnes) of material was received, comprising of 51.3% natural hardfill, 39.7% construction and demolition materials, and 9% cover material. (The total for the previous 12 month period was 452,000 m3, with an average for the previous 5 years of around 511,000 m3). The Council continues to monitor compliance with the bylaw, with Environment Canterbury monitoring compliance with the Resource Management Act 1991.

2.6 Earthquake related wastes: Burwood Resource Recovery Park

Burwood Resource Recovery Park (BRRP) was established to enable post earthquake building and construction material to be removed from demolition sites as soon as possible, and then be sorted, processed and recycled over a longer time period.

By June 2013 the volume of materials transported to the site was approximately 417,000 tonnes, with the volume to potentially increase to around 500,000 tonnes.

Port of Lyttelton has been consented by Environment Canterbury to receive earthquake related rubble, and by end of July 2013 817,000 tonnes have been used at the port.

2.7 Treated timber waste

A Ministry for the Environment *Waste Minimisation Fund* project on Treated Timber Waste Minimisation Project is being conducted in 2013 with a focus on Canterbury. The results can be viewed at http://ecan.govt.nz/advice/your-land/waste/pages/default.aspx
The results will be reported to the Canterbury Waste Joint Committee.

Part Three — Vision, Goals, Guiding Principles and Targets

3.1 Vision

A prosperous city, in a clean, healthy and sustainable environment , where each person, business and organisation takes responsibility for waste minimisation and actively works toward zero waste to landfill.

3.2 Goals

- Individuals, businesses and organisations take greater responsibility for waste minimisation.
- Council supports and incentivises waste reduction, reuse and recycling.
- Council provides environmentally sound waste recovery and disposal services.

3.3 Principles:

The Council takes account of the following principals in its waste management planning and implementation.

Integrated Waste Management

It should be emphasized that redesign precedes the five principles set out below, meaning that all products and services should be designed to avoid waste and to enable products at the end of their life to be reprocessed back into useful products.

The internationally accepted waste management hierarchy consists of:

1. *Reduce: The reduction of the volume and toxicity of waste*
2. *Reuse: The repeated or continued use of a product or item in its original form*
3. *Recycle: The reprocessing or re-manufacturing of material into new or different products*
4. *Recover: The energy, materials and biomass in waste that can be recovered obtained from a product or material, which can include energy production and composting*
5. *Residual Management: The environmentally responsible treatment or disposal of material that is not able to be reduced, reused, recycled or recovered.*

While this hierarchy is supported, it needs to be recognised that progress in the overall reduction of waste can, at times, be achieved without necessarily following this sequence, for example by undertaking kerbside recycling before all options for reduction or reuse have been implemented. In other words, while the waste hierarchy may be the ideal way to reduce waste, waste decisions have to be made in the context of economic and social factors.

It is inevitable that for the foreseeable future landfilling will be required to deal with Christchurch's residual waste, while at the same time working towards zero waste to landfill.

Personal Responsibility

Only if everyone takes personal responsibility for reducing the waste that they generate can progress be made towards the goal and targets.

Full Cost Pricing

The generator of waste should pay the cost of managing that waste in a visible way to discourage waste generation. This also reflects the principle of personal responsibility, since those responsible for generating the wastes are those who should bear the cost of disposal.

Transparency

The process of developing this Plan, and subsequent strategies and actions will be open, transparent and accountable, and consistent with public consultation processes as required by the Local Government Act 2002.

Commitment to Regional Cooperation

The Council, as signatory to the Canterbury Regional Waste Management Agreement, adopted by all Canterbury territorial authorities, and as a member of the Canterbury Waste Joint Committee and Canterbury Landfill Joint Committee, has signaled its strong commitment to waste planning and minimisation on a regional basis in Canterbury. This includes the management of hazardous wastes in the region, managed in terms of the Canterbury Hazardous Waste Management Strategy (as coordinated by Environment Canterbury).

Working with Tangata Whenua

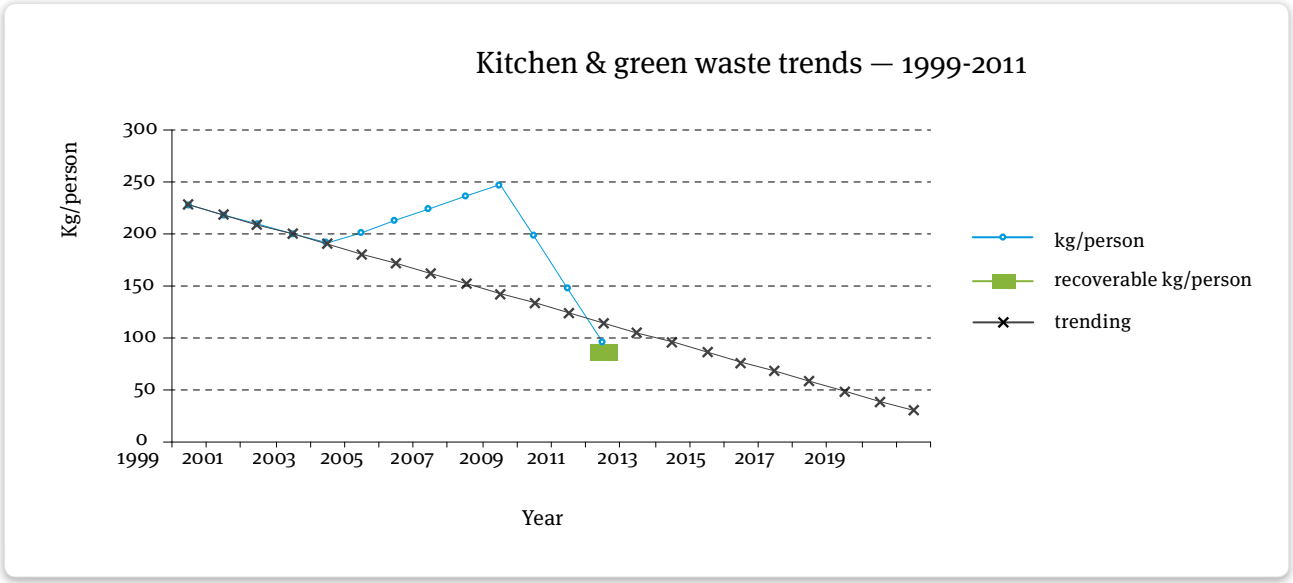
The Council acknowledges the following principles put forward by Tāngata Whenua.

- *Ngäi Tahu wishes to be consulted early (at least one month prior to an application for resource consent being lodged with the relevant Council(s)) on all Christchurch City Council matters (new and previous solid waste management projects) involving the siting of waste disposal areas, and with particular regard to be had to the Te Rünanga or Ngäi Tahu Freshwater Policy. For significant solid waste management proposals, a cultural impact assessment report may be appropriate to determine the effects on Ngäi Tahu cultural values and to propose appropriate mitigation measures.*
- *Ngäi Tahu supports any development project that reduces waste, provided that there are no significant impacts on Tāngata Whenua cultural values. Ngäi Tahu encourages the Council to work with them to identify the parameters of 'significant impacts on Tāngata Whenua cultural values'.*
- *Ngäi Tahu supports all policies to implement recycling of waste, provided there are no significant impacts on Tāngata Whenua cultural values. Ngäi Tahu also encourages Council to keep abreast of technological advances in waste reduction and recycling methods.*
- *Ngäi Tahu would object to any future waste disposal areas being placed in or near mahinga kai areas including the estuary and coastal dune areas.*
- *Ngäi Tahu strongly objects to the siting of waste disposal areas on waahi tapu and/or waahi taonga areas of significance of their ancestors.*
- *Ngäi Tahu supports the banning of products that are non-biodegradable being used within New Zealand, or alternatively that a fee be levied on all such products to ensure that the disposal of such materials does not affect the environment.*
- *Ngäi Tahu supports an international educational process that develops and encourages farming that reduces chemical experimentation and costly disposal of hazardous containers.*
- *Ngäi Tahu encourages the council to engage in national and regional strategy development for the safe disposal of chemicals and their bi-products, and to implement such strategies as soon as practicably possible.*
- *Ngäi Tahu has concerns regarding the potential impacts of closed landfill sites on sites of cultural significance to Tāngata Whenua. Ngäi Tahu recommends a process of shared information with the council to identify which cultural sites may potentially be affected, where after a programme to determine a way forward will be considered.*

3.4 Waste Stream Targets

3.4.1 Kitchen and Green Waste Target

- No more than 30 kilograms per person per year of recoverable green and kitchen waste is sent to landfill by 2020 (currently 87 kilograms per person per year).

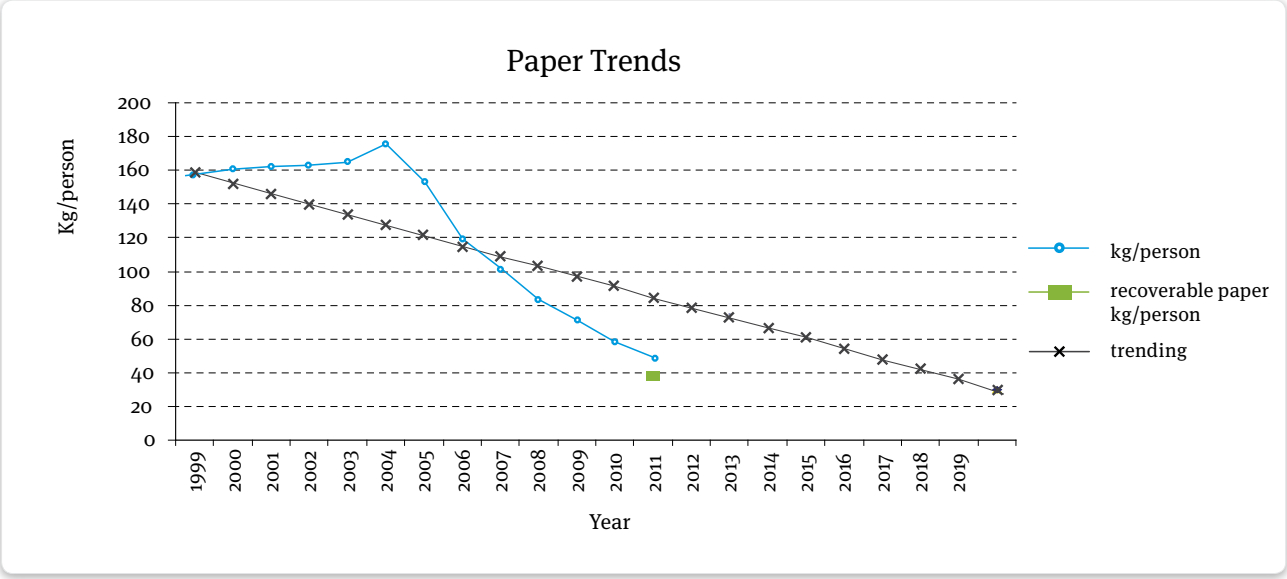


Note 1: 2011 population base of 367,770 used for calculations

Note 2: Current figures provided based on recoverable material. Currently 110 kg per person per annum is going to landfill however only 87 kg of organic material is recoverable. 23 kg/person/annum is unrecoverable either due to contamination or is unprocessable at the organics processing plant (flax, etc).

3.4.2 Paper and Cardboard Target

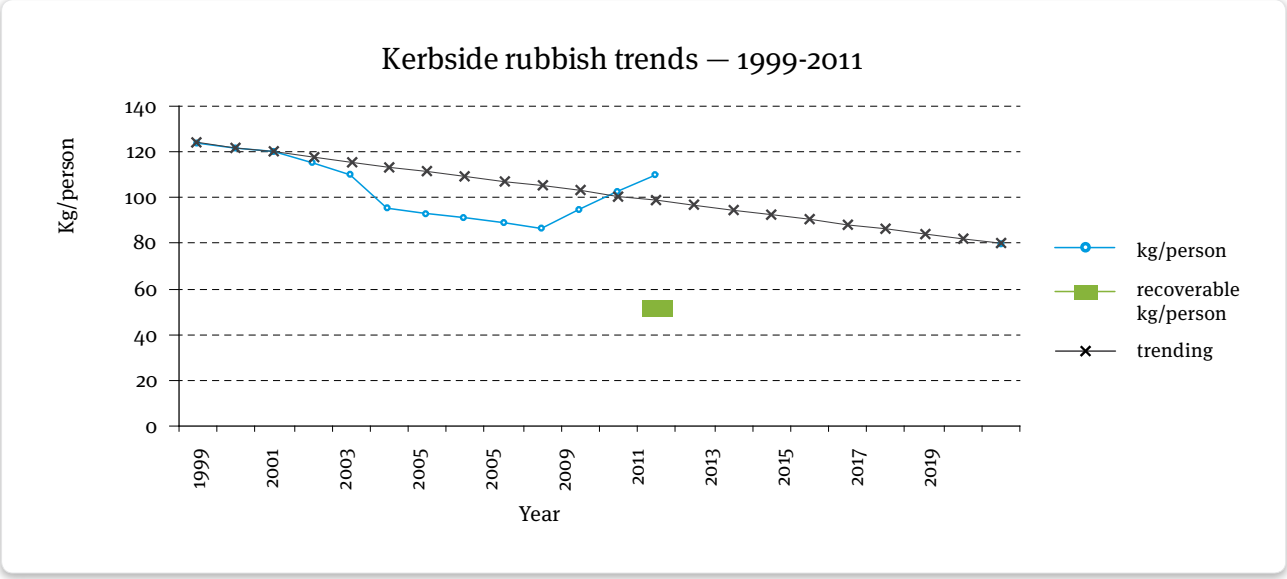
- No more than 30 kilograms per person per year of recoverable paper and cardboard is sent to landfill by 2020 (currently 38 kilograms per person per year).



Note: Current figures provided based on recoverable material. Currently 49 kg/person/annum is sent to landfill however only 38 kg/person/year is divertible.

3.4.3 Kerbside Waste Target

- No more than 80 kilograms per person per year of kerbside waste collected by the Council is sent to landfill by 2020 (currently 110 kilograms per person per year).



Note: 110 kg per person per annum is the actual amount being disposed to landfill. Currently 52 kg per person per annum of this is recoverable.

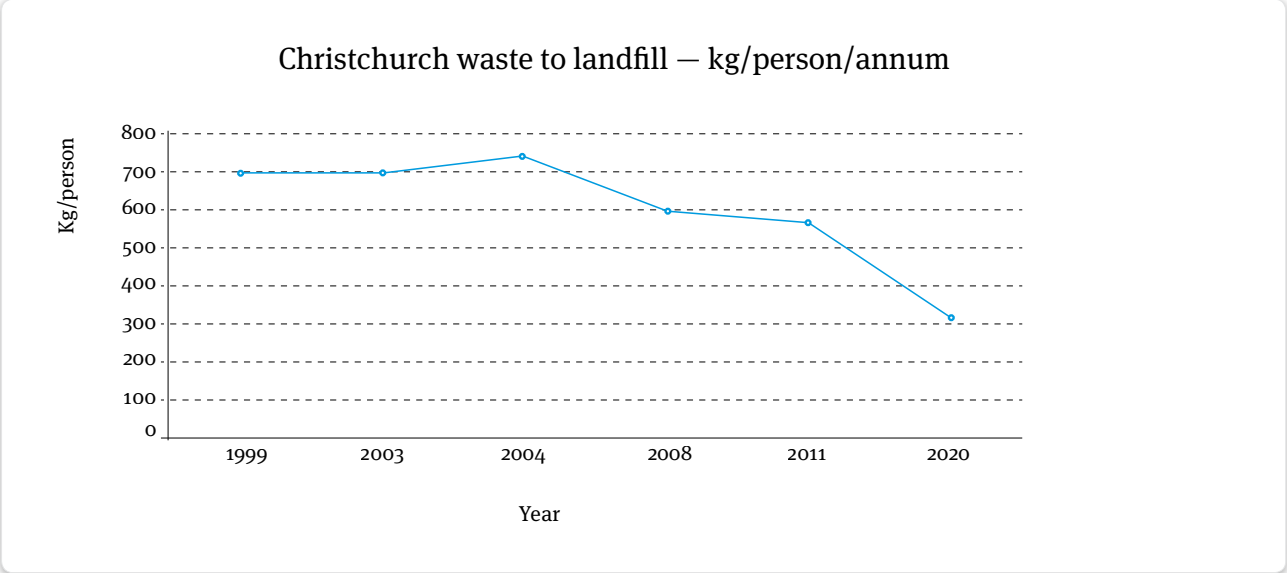
While total waste to landfill has decreased from 254,000 tonne in 2007 to 193,000 tonne in 2011, the introduction of the red rubbish bin as part of the 3 bin system has resulted in a change in the way residents deal with their rubbish. Red bins have advantages of capacity and ease of use over the old black bags, and has resulted in decreased volumes of rubbish taken by car/ trailer directly to the refuse stations and increased volumes presented at the kerbside with kerbside collected volumes increasing from 33,000 tonnes to 41,000 tonnes per year over the 2007 to 2011 period.

3.4.4 Plastics

Only 5 kilograms per person per year is currently sent to landfill. At this low level no target is proposed to further reduce plastics to landfill. It is more cost effective to focus on higher volume issues such as unwanted organics in refuse bins. Volumes of plastics are still being monitored.

3.4.5 Overall Waste to Landfill Target

No more than 320 kilograms per person per year of waste is sent to landfill overall by 2020 (currently 524 kilograms per person per year).



Note: 162 kg per person is currently divertible. To achieve a target of above target 320 kg by 2020 will require diversion from areas like timber and rubble.

Part Four — Action Plan

Actions listed in Table 8 recognise the importance of the following assessment criteria:

Table 7 – Action Plan Assessment Criteria

Criteria		The Council will give preference to options that -
Economic	Quantity	Address wastes generated in large amounts, either tonnes or volume (e.g. food scraps, greenwaste, paper and cardboard)
	Cost effectiveness	Offer value for money
Environmental	Reducing the harmful effects of waste	Assess the risk of harm to the environment and human health from wastes to identify and take action on those wastes of greatest concern
	Improving the efficiency of resource use	Will improve the efficiency of resource use to reduce the impact on the environment and human health and capitalise on potential economic benefits
Social	Public concern	Respond to public concerns (e.g. the kerbside recycling of plastic supermarket bags)
	Local benefit	Provide benefits to the Christchurch community (e.g. use recovered resources locally and create local jobs)
Cultural		Recognise Tangata Whenua principles and values
Achievability		Have the potential to succeed

Action Plan 2013

As the rebuild of Christchurch city will extend beyond the 6 years statutory life span of the this Plan, and with state of the art waste management and minimisation infrastructure already in place, the 2013 Action plan does not include any capital expenditure, with all actions to be funded from existing operational budgets. Actions are not allocated to specific time periods and will continue throughout the lifespan of the Plan.

Working towards the target for residual waste to landfill (no more than 320 kg/person/year by 2020) is dependant upon progress with the actions set out in the Action Plan in Table 8 (which also include specific action plan targets, additional to the waste stream targets set out above), and may also be affected by the speed of the rebuild in Christchurch.

Education and raising awareness to increase participation and compliance with kerbside collections and general waste minimisation is a generic action across all waste minimisation and will continue to be provided by a specialist team, and remain an important ongoing support function for the relevant actions listed in Table 8. The Council's *Solid Waste Education and Communication Strategy 2004* will be reviewed during 2013. Key waste minimisation advice for ratepayers are continually being identified and these will continue to be rolled out as individual messages in order to maximise potential impact and effectiveness.

The Council recognises the special rural needs of Banks Peninsula communities regarding waste minimisation and management, and that targeted focus on Banks Peninsula's needs will be actioned where the need is identified. Initially this will be through targeted communications for services available for rural users.

Table 8 – Action Plan 2013

Number	Action	Action Targets	Issue	Responsibility
Organic Materials				
1	Increase the effectiveness of the kerbside collection service to achieve increased volumes of divertible organic materials, without increasing contamination	To reduce the volume of organics in the red bins by 10 % every 3 years, based on 2011/12 audit results	Maximise recovery of organic materials and minimise unnecessary materials going to landfill	Christchurch City Council
2	Promote awareness of unwanted contaminants in organic waste stream e.g. arsenic and other contaminants	Monitor monthly reports from Living Earth	Reduction risk of contamination and increase effectiveness of service	Christchurch City Council, Environment Canterbury and Living Earth
3	Raise awareness that the preferred option for residential kitchen waste is the green organics bin and not kitchen sink food dispensers	Review the number of letters sent annually to stakeholders	The organics treatment plant is the best recipient of kitchen scraps, not the wastewater treatment plant	Christchurch City Council
Paper and Cardboard				
4	Increase the effectiveness of the kerbside collection service to achieve increased volumes of divertible paper and cardboard, without increasing contamination	Track volumes of paper and cardboard on a 3 yearly basis to ensure that diversion levels are maintained	Maximise recovery of paper and cardboard and minimise unnecessary materials going to landfill	Christchurch City Council
5	The Council continues to undertake reduction in paper waste within the organisation and will seek to identify and implement additional initiatives to further reduce paper waste across the Council e.g. reduce the amount of paper delivered to elected members.	As above	As above	Christchurch City Council
Plastics				
6	Maintain the high level of diversion of plastics through the kerbside collection service, reminding ratepayers that all classes of plastic containers can be received.	Track volumes of plastics on a 3 yearly basis to ensure that diversion levels are maintained	Maximise recovery of plastics and minimise unnecessary materials going to landfill	Christchurch City Council
Commercial and Industrial Waste Minimisation				
7	Recruit businesses to actively take part in Target Sustainability	Average of 100 businesses actively taking part in Target Sustainability each year.	Waste reduction advice to businesses	Christchurch City Council
8	Ensure that a proportion of businesses actively taking part in Target Sustainability are satisfied with the advice and support received	> = 85% customer satisfaction each year.	Customer satisfaction	Christchurch City Council

Number	Action	Action Targets	Issue	Responsibility
9	Produce a number of waste reduction case studies for businesses actively taking part in Target Sustainability resource efficiency initiatives.	10 waste reduction case studies per year, with each case study demonstrating a greater than 10% reduction in waste sent to landfill per identified project from when businesses concerned participated in the Target Sustainability waste reduction initiative.	Promotion of commercial waste reduction	Christchurch City Council
Treated Timber				
10	Lobby for and participate with national and regional programmes to divert treated timber from residual waste	Monitor available data and share with stakeholders	Collaboration to achieve a nation wide approach	Christchurch City Council and Canterbury Waste Joint Committee
Tyres				
11	Lobby for and participate with national and regional programmes to deal with the problem of end of life tyres	Monitor available data and share with stakeholders	Collaboration to achieve a nation wide approach	Christchurch City Council and Canterbury Waste Joint Committee
Electronic Waste				
12	Lobby for and participate with national and regional programmes to divert electronic waste from landfill	Monitor available data and share with stakeholders. Lobby for improvements.	Collaboration with Canterbury territorial authorities and with the Ministry for the Environment to achieve a nation wide approach	Christchurch City Council and Canterbury Waste Joint Committee.
Compostable and Biodegradable Packaging				
13	Lobby relevant parties including the New Zealand Packaging Council in order to promote a workable and uniform standard for compostable and biodegradable packaging	Receive only compostable materials at the organics processing plant that do not degrade the final product.	Compostable and biodegradable packaging presents costly processing issues at the organics processing plant and reduces plastics value from materials recovery facility	Christchurch City Council and Living Earth Ltd
Polystyrene				
14	Lobby through *WasteMinz* and other relevant avenues for the reduction and avoidance of the use of polystyrene as a packaging material.	Liaise with WasteMinz annually on appropriate lobbying options	Recycling of polystyrene is not currently done and therefore is sent to landfill	Christchurch City Council; Canterbury Waste Joint Committee; WasteMinz
Construction and demolition wastes				
15	Monitor available data and ensure compliance with the Cleanfill Licensing Bylaw 2008	Bylaw compliance	Support reuse of materials where viable	Commercially owned sites receive 95% of volumes
Education and Raising Awareness				
16	Review the *Solid Waste Education and Communication Strategy 2004*, and continue with current education programs	Effectively reach targeted audiences, including schools	To ensure targeted and continuous education in support of waste minimisation	Christchurch City Council

Number	Action	Action Targets	Issue	Responsibility
17	Support volunteer community groups within the city by supplying current information and education material for their use.	Encourage community groups to use information available	Engaging community groups to assist in waste minimisation	Christchurch City Council
Handling and Disposal of Asbestos				
18	Continue to work with key stakeholders to ensure safe handling and transport of asbestos waste including asbestos cement	Compliance with all relevant regulations	Ensure public health, in cooperation the Medical Officer of Health.	Christchurch City Council, Department of Labour and commercial contractors
Clinical and Hazardous Wastes				
19	Continue to liaise with Community Public Health for the Medical Officer of Health on all matters relating to the management of clinical and hazardous wastes	Compliance with all relevant regulations	Ensure public health, in cooperation with the Medical Officer of Health.	Christchurch City Council; Medical Officer of Health; Canterbury Waste Joint Committee; Environment Canterbury, and commercial contractors
Litter				
20	Maintain litter avoidance processes in accordance with the Council's litter Strategy 2005, focussing on education and raising awareness	Progressively reduce litter cleanup costs	Litter degrades the environment, resulting I substantial clean up cost to ratepayers	Christchurch City Council: Keep New Zealand Beautiful
21	Where economically viable utilise the two bin (rubbish and recycling) litter bin options as currently in use in the central business district and Botanic Gardens at other key locations in the city.	Annually review potential locations for additional locations for two bin stations	Support recycling. The costs of servicing public recycling bins are a restricting factor in expanding such bins to locations other than identified key locations.	Christchurch City Council
Nappies				
22	Christchurch City Council, in conjunction with the Nappy Lady, will be running two workshops per year on the use of cloth nappies.	Receive regular reports to evaluate the role of the workshops	Support reuse of nappies where viable	The Nappy Lady *www.thenappylady.co.nz*
Hazardous Waste Management and Minimisation				
23	Lobby for and participate in national and regional programmes to improve hazardous waste management and minimisation.	Monitor available data and share with stakeholders.	Reduce risk of harm	Christchurch City Council; Canterbury Waste Joint Committee; Environment Canterbury
Gaseous Waste				
24	Encourage practices that minimise harm to the environment, such as gas capture from refrigerators and used gas bottles being disposed of or collected for re-use, by working with Environment Canterbury to encourage following best practice guidelines.	Provide information on Council website, and include in Council newsletters	Reduce risk of harm	Christchurch City Council; Environment Canterbury

Part Five — Funding

The funding of the Council's Waste Minimisation and Disposal costs is from a combination of rates revenue, fees, charges and levies.

In respect of the rates revenue, the Rubbish component is included in the Uniform Annual General Charge, while the Recycling and Organics components are recovered via the Waste Minimisation Annual Charge.

The contribution of the Ministry for the Environment's Waste Minimisation Levy to the development and ongoing operational costs of the kerbside recycling and organics collections and processing has been, and continues to be important. Use of such levies could also fund future additional waste minimisation initiatives.

There are no capital projects required for the implementation of this Plan, and the Action Plan will be funded from existing operational budgets.

The following is an extract from the Council's 2012 Annual Plan relating to Waste Minimisation and Disposal p. 83.

2011–12 Plan $000		Note	2012–13 LTCCP $000	2012–13 Plan $000	Variance to LTCCP
	Cost of proposed services				
7,376	Recyclable Materials Collection and Processing	1	7,115	8,032	917
15,099	Residual Waste Collection and Disposal	2	15,441	16,879	1,438
16,303	Organic Material Collection and Composting	3	19,491	18,148	(1,343)
729	Commercial and Industrial Waste Minimisation		854	543	(311)
39,507			**42,901**	**43,602**	**701**
	Revenue from proposed services				
1,172	Recyclable Materials Collection and Processing	1	392	1,161	769
2,708	Residual Waste Collection and Disposal	2,4	4,864	3,234	(1,630)
4,671	Organic Material Collection and Composting	4	3,675	4,674	999
-	Commercial and Industrial Waste Minimisation		-	-	-
8,551			**8,931**	**9,069**	**138**
	Revenue by source				
7,451	*Fees and charges*		*8,931*	*8,069*	*(862)*
1,100	*Grants and subsidies*		-	*1,000*	*1,000*
8,551			***8,931***	***9,069***	***138***
30,956	**Net operational cost (funded by rates)**		**33,970**	**34,533**	**563**
-	Vested assets		-	-	-
30,956	**Net cost of services**		**33,970**	**34,533**	**563**

2011–12 Plan $000		Note	2012–13 LTCCP $000	2012–13 Plan $000	Variance to LTCCP
	Cost of capital expenditure				
806	Renewals and replacements		375	376	1
6,900	Infrastructure Rebuild	5	-	1,300	1,300
228	Improved service levels		623	625	2
-	Increased demand		111	-	(111)
7,934			**1,109**	**2,301**	**1,192**
	This capital expenditure is funded by				
806	Rates		375	376	1
7,128	Borrowing		734	625	(109)
-	Transfers from Reserves		-	1,300	1,300
-	Development Contributions		-	-	-
-	Grants, Subsidies and other		-	-	-
7,934			**1,109**	**2,301**	**1,192**

Rationale for activity funding (see also the Revenue and Financing Policy)

User charges are collected for services considered reasonable by the Council to fulfil the objectives of the service and within the constraints of the market. The net cost of Recyclable Materials Collection and Processing and Organic Material Collection and Processing is funded by a uniform targeted rate on serviced properties. The balance of the net operating cost is funded by general rates, as the whole community benefits from these activities. Capital expenditure is funded corporately in accordance with the Revenue and Financing Policy.

Explanation of operational variances from the LTCCP

1. The accounting treatment of the Materials Recovery Facility, not agreed at the time of completing the LTCCP, has resulted in an additional $0.5 million of depreciation cost, with compensating additional income.
2. Residual Waste volumes under the kerbside collection system are higher than modelled in the LTCCP. This has resulted in $1.5 million of additional disposal costs and $0.9 million less in revenue from sale of bins and bin bags, especially in the central city. The additional disposal costs are partially offset by reduced depreciation costs of $0.5 million at the Burwood landfill site which has now re-opened to accommodate earthquake waste, and whilst attracting $0.6 million in extra revenue, is offset by a similar amount in maintenance costs applicable to operating the site.
3. Depreciation from the Organics Plant was overestimated by $0.6 million in the LTCCP. Modelling of expected volumes of organic waste was also overestimated, resulting in a $0.8 million reduction in Service Contracts.
4. The Waste Minimisation Levy income of $1.0 million was included as part of the Residual Waste Activity in the LTCCP. This has been moved to the Organics Activity as the intent of the levy is to encourage a reduction in waste to landfill.

Explanation of capital variances from the LTCCP

5. An assessment of the cashflow for the rebuild based on the current estimate and likely programme is included.

Waste Management and
Minimisation Plan 2013
Christchurch City Council

Christchurch City Council

ANP5356 September 2013