

Te whakahaerenga para

2020 Waste Management and Minimisation Plan

Ōtautahi-Christchurch





Table of contents

Executive summary	1	Part 2. Background	18
Part 1. The plan	3	8. Legislative context	18
1. Introduction	3	9. Waste Assessment 2019	19
2. Our current situation	4	10. Commissioned reports	21
2.1. International context	4	10.1. Waste Management and Minimisation Blue Sky Scan	21
2.2. National response	5	10.2. Waste to energy study	21
2.3. Regional approach	6	10.3. EcoCentral feasibility study	21
2.4. Local situation	6	10.4. Living Earth feasibility study	21
3. Current and future challenges	8	11. Review of the 2013 Waste Management and Minimisation Plan	22
3.1. Selling our products	8	11.1. Kerbside collections	22
3.2. Discrepancy between public expectation and delivery	9	11.2. Waste diversion targets	23
3.3. Valuing our resources	9	11.3. Key action areas since 2013	24
3.4. Transition challenges	10	12. Solid waste and resource recovery contracts	25
3.5. Operational challenges	10	13. Operational policies and targets	26
4. Moving up the waste hierarchy	11	13.1. Existing Council Policies	26
5. Our vision, goals and objectives	12	13.2. Operational Targets	26
6. How we'll achieve the vision	14	Appendix A: Central Government Waste Work Programme	27
6.1. Supporting and leveraging Central Government's work programme	14		
6.2. Service delivery review	14		
6.3. Council's action plan	14		
6.4. Working together	15		
7. Funding the plan	16		
7.1. Rates	16		
7.2. Inner-city kerbside collection	16		
7.3. Waste levy	16		
7.4. Canterbury Waste Joint Committee grants funding	17		
7.5. Revenue from divertible materials and recovery facilities	17		

Executive summary

The 2020 Waste Management and Minimisation Plan has been prepared during a period of significant change. This includes increased global recognition of the impact of consumption on climate change, the negative impacts of waste on our land and marine environments and significant disruption to our international recycling markets.

The need to minimise waste and avoid single use products is becoming more visible and normalised, yet continuing global consumption habits mean predicted reductions in waste are not occurring. For example, half of all plastics ever manufactured in the world have been made in the last 15 years¹. Here in Christchurch, we set a waste reduction target in 2013 of no more than 80kg/person/year of kerbside waste going to landfill by 2019. Last year 115kg/person was sent to landfill.

Managing and minimising waste is a key Council responsibility. All of us, as individuals and organisations, need to focus on what we are creating and using that is becoming waste. As a Council we need to look beyond our core services, engaging with Central Government as well as organisations and individuals across Christchurch to develop a foundation for change.

This plan is focused on what we can achieve for the next six years, with the following vision:

Ōtautahi-Christchurch is a sustainable city, working towards zero waste and a circular economy

Achieving this vision involves reducing our reliance on landfill, reducing the creation and purchasing of things we don't need, and increasing opportunities to reuse and recover materials that we already have.

Where our waste comes from²

Kerbside collection: this is made up of the three-bin system (480,000 bins) and community collection points (dedicated drop-off sites for rural areas not on the bin network). Our kerbside collection is funded by rates with a total of 65 per cent of material processed as recycling or composted.

Public transfer stations: these are our public drop-off facilities. We have three in Christchurch and one in Banks Peninsula. Transfer stations provide free drop-off for recycling, with organics and rubbish charged a disposal fee.

Recycling



34,293 tonnes



2,157 tonnes

Recycling processed: 36,450 tonnes



Much of our current recycling is sent overseas to be processed into new products.

Organics



51,706 tonnes



21,152 tonnes

Organics processed: 72,858 tonnes



Compost produced at the plant is sold to farms to improve soil quality.

Rubbish



44,525 tonnes



69,290 tonnes

Waste to landfill: 113,815 tonnes



Methane produced from Kate Valley Regional Landfill is used to generate electricity.

¹ <https://www.nationalgeographic.com/environment/habitats/plastic-pollution/>
² 2018/2019 financial year

Key challenges identified for our solid waste and resource recovery services

- 1. Selling our products:** our recycling system relies on being able to sell most of our products overseas. We need to find local solutions to manage our waste and resources sustainably.
- 2. Discrepancy between public expectation and delivery:** resource recovery services do not meet the growing expectations of residents for waste minimisation. We need to work with Central Government on waste minimisation initiatives and opportunities.
- 3. Valuing our resources:** products that are no longer wanted frequently go to landfill, when they, or their component materials, still have value. We need solutions that allow us to recover or reuse products and materials.
- 4. Transition challenges including:** long-term planning for our services during significant change at international and national level and climate change impacts on closed landfills.

To address these challenges, and connect to our vision, we've developed the following goals and objectives.

Goals

- **Everyone has access to recycling, resource recovery and waste management services.**
- **Organisations and individuals understand that reducing and minimising waste is their responsibility, as well as ours.**
- **Valuable resources are reused or recycled and don't go to landfill.**

Objectives

1. Collaborate with Papatipu Rūnanga, organisations, industry operators and Central Government, to support a regional and national transition to zero waste and a circular economy.
2. Make sure our waste management facilities and services maximise resource recovery and avoid adverse effects to people and the environment.
3. Reduce our reliance on overseas markets for recyclable materials.
4. Make sure our waste, recycling and organics facilities support our climate change targets. Our targets are zero net greenhouse gas emissions, and to halve the 2016 baseline for methane, by 2045.
5. Make sure our kerbside recycling and organics collection has low contamination levels, allowing for sorting of products, which are then suitable for processing or sale. This creates long-term economic benefits.

Minimising waste and using resources sustainably is a key community outcome in our strategic framework³.

How we're supporting waste minimisation

- Supporting and engaging with the Central Government's work programme for waste⁴
- Collaborating with our neighbouring and industry representatives
- Regional and local funding opportunities for organisations promoting resource recovery and waste minimisation
- Bylaws regulating the type of waste operations, disposal sites and litter
- Public drop-off facilities for recycling, organics and items not part of our kerbside services including hazardous substances and scrap metal
- Recycling and organics kerbside collection service
- Marketing and communication programmes
- Education and support programmes and events including our Learning Through Action school programmes
- Working with industry through our Target Sustainability programme⁵

This document has two parts:

- **Part 1: The plan:** why minimising waste is so important, our current situation, what we want to achieve over the next six years and the methods we will use to achieve this.
- **Part 2: Background:** the legislative context, waste assessment and review of our previous plan, are used as a foundation in developing this plan.

The detailed action plan is online.

ccc.govt.nz/ourwaste

It is a living document that is updated regularly.

³ <https://ccc.govt.nz/the-council/how-the-council-works/20182028-vision/strategic-framework>

⁴ <https://www.mfe.govt.nz/waste/waste-and-government>

⁵ <https://ccc.govt.nz/environment/sustainability/target-sustainability>

Part 1. The plan

1. Introduction

The efficient use of our natural resources is fundamental to our current and future social, economic, cultural and environmental wellbeing. Developing solutions to our current waste challenges is the responsibility of the Council as well as all Christchurch residents, businesses, organisations and Central Government. Our role is to lead and facilitate solutions to prevent waste as well as providing solid waste and resource recovery services.

How we manage our waste, recycling and organics services needs regular review. When the 2013 Waste Management and Minimisation Plan was developed, our three-bin system was well-established, innovative and receiving consistently high resident satisfaction⁶. Since then, there has been a global change in recycling markets and increased public interest in the environmental impacts of everything that is created and then becomes waste, particularly regarding climate change.

In Christchurch 269,405 tonnes of waste was sent to landfill last year. Another 123,532 tonnes was diverted from landfill through our recycling and organics processes. In a global market, Christchurch has limited influence, so collaboration at regional and national level is vital. Across New Zealand we need to move towards zero waste. We need to rethink how we use materials, and

embrace a more circular economy that helps keep our products and materials in use instead of becoming waste.

The foundations for this plan include a waste assessment and a review of the international, national and local context that the plan is being developed within. We have established the challenges we are facing, the future we need to work towards and key steps over the next six years to get there. This includes the immediate challenges with contamination in our kerbside recycling service.

Looking forward, we need to continue to engage with the Central Government's work programme for waste, outlined in Appendix A. It provides a national response to the key challenges for solid waste and resource recovery. We need to work more closely with Papatipu Rūnanga, organisations and industry to help increase waste avoidance and diversion. We need to stimulate innovation and increase the opportunity to recover valuable materials.

The national direction for this statutory plan is set by the New Zealand Waste Minimisation Act 2008 (the Act) and the New Zealand Waste Strategy 2010. Under the Act, councils have a responsibility to 'promote effective and efficient waste management and minimisation'.



⁶ <https://ccc.govt.nz/the-council/how-the-council-works/reporting-and-monitoring/residents-survey>

2. Our current situation

The plan has been developed during a period of significant change in people's expectations and the market opportunities for waste and resource recovery across the world. This section outlines the critical considerations from an international to local level that have been used to determine the challenges and opportunities that guide this plan. Further detail is provided in Part 2: Background.

2.1. International context

A linear economy, where materials are used to create products with a limited lifespan that are then disposed of, is an inefficient use of resources. Earth has finite resources, yet it is still considered both normal and acceptable for products to be used for short periods of time and disposed to landfill. Minimising our usage and waste leads to a more efficient use of resources, reduced pollution and less harm to our environment. It helps enable us to preserve our environment for future generations. Currently, we waste many valuable resources that could be recovered and reused. Our approach is causing landfills to fill up and our environment to become polluted by discarded products. These impacts are often not visible when we buy products⁷.

The true cost of waste is more than just the cost of disposal. It also includes the additional cost of raw materials, energy and labour involved in making, transporting, selling and using the products. This can be five to 20 times higher than the cost of disposal⁸.

Climate change impacts

The production and consumption of goods generates greenhouse gases from the extraction of raw materials, development, distribution, use and disposal. Our economy is based on a linear take, make and dispose model of resource use which is not sustainable. In Christchurch, waste contributes nine per cent of our emissions.

The process to extract fossil fuels required for a plastic product, including the related land disturbance, transport, manufacturing and distribution, emits significant amounts

of carbon dioxide into the atmosphere. Disposal also emits greenhouse gas emissions, the severity of which depends on the method of disposal. Research indicates that 36 per cent of plastic produced is for the purpose of single-use packaging⁹. A benefit of reducing reliance on single-use plastics is the significant reduction of greenhouse gas emissions. While recycling diverts waste from landfill, studies indicate that 92 per cent of plastics are not recycled after their initial intended use¹⁰.

International recycling markets

There has been a significant shift in the international recycling markets. China's National Sword Policy¹¹, introduced contamination thresholds for imported recycling products at 0.5 per cent. The thresholds came into force in March 2018¹² and severely disrupted exports for paper and plastic commodities. This has created a surplus of products with contamination greater than 0.5 per cent as there is less demand for them. A flow-on impact to other South East Asian markets, has significantly reduced the prices for paper, cardboard and mixed plastics.

In 2019 the Norwegian Amendment¹³ to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal¹⁴ was adopted. The amendment, effective from January 2021, means exporters of contaminated, or hard-to-recycle plastic waste will need consent from the Governments of receiving countries before shipping. While the amendment will not prevent the trade of plastic waste, it incentivises trade in high-quality, sorted, clean plastic and helps ensure that materials are being shipped for the purposes of recycling.

⁷ <https://www.mfe.govt.nz/waste/why-reducing-reusing-and-recycling-matter>

⁸ <https://www.plastics.org.nz/environment/efficient-manufacturing/waste-minimisation>

⁹ <https://www.pmcsa.ac.nz/topics/rethinking-plastics/>

¹⁰ https://www.ellenmacarthurfoundation.org/assets/downloads/publications/NPEC-Hybrid_English_22-11-17_Digital.pdf

¹¹ <https://www.wasteminz.org.nz/wp-content/uploads/2018/11/WasteMINZ-2018-Mike-Ritchie-on-China-National-Sword.pdf>

¹² <https://recyclinginternational.com/business/industry-concern-as-china-confirms-new-thresholds-for-contaminants/2068/>

¹³ <https://www.ban.org/news/2019/5/10/basel-convention-agrees-to-control-plastic-waste-trade>

<https://www.lawsociety.org.nz/news-and-communications/latest-news/news/nz-agrees-to-basel-convention-plastic-waste-amendment>

¹⁴ <http://www.basel.int/>

2.2. National response

In response to global challenges, Central Government has developed a broad work programme which includes:

- A review of the Waste Disposal Levy, with levy increases from 2021 until 2024
- A container return scheme which is under design
- Mandatory product stewardship, where everyone involved (producers, brand owners, importers, retailers, consumers, collectors, and re-processors) in the lifespan of a product is called upon to take responsibility to reduce its environmental, health, and safety impacts¹⁵
- Additional legislative controls to support a more circular economy.

What is a circular economy?

As outlined by the Ministry for the Environment¹⁶, a circular economy is about ensuring we can unmake everything we make, replacing the linear model of take, make and dispose. It is based on three principles, outlined in Figure 1 below¹⁷.



Figure 1. Key concepts in a circular economy, provided by the Ellen MacArthur Foundation.

New Zealand remains constrained by our relative scale of production and large distances between major population bases, meaning the solutions to our waste challenges are often more difficult than in more populated countries. Therefore, the types and location of new infrastructure needs to be considered on a regional and national scale. Information on the Ministry for the Environment's work programme is provided in Appendix A.

Working with industry to cut plastic waste

The New Zealand Government became a signatory to the New Plastics Economy Global Commitment in October 2018. This initiative, led by the Ellen MacArthur Foundation and United Nations Environment Programme, seeks to address the root causes of plastic waste and pollution. This is a global commitment bringing together governments, businesses and NGOs in adopting a circular economy approach to plastics with key targets in place for 2025.

As a first step, the Ministry for the Environment has worked with 15 local and multi-national companies to

sign the New Zealand Plastic Packaging Declaration. This is a joint commitment to use 100 per cent reusable, recyclable or compostable packaging in their New Zealand operations by 2025 or earlier.

Changes to commodity prices for recyclable materials

We're part of a national taskforce the Government has set up, working with local councils and the waste industry, to identify solutions where prices have reduced for the recyclable materials we collect. International policies to ban or restrict the import of a number of different products, including low-quality plastics, have resulted in low sales prices for recyclables. This change has highlighted that we cannot rely on the international market to take our low-value recyclable material. We need to raise the quality of what is collected, and how it is processed, so we can provide higher-quality recyclables for sale. In the medium to long term, more onshore processing solutions are needed.

¹⁵ <https://sustaintrust.org.nz/blog/making-it-mandatory-expanding-product-stewardship-in-nz>

¹⁶ <https://www.mfe.govt.nz/waste/circular-economy>

¹⁷ <https://www.ellenmacarthurfoundation.org/circular-economy/concept>

2.3. Regional approach

Canterbury councils have historically worked together to address waste challenges. This includes the establishment of Kate Valley Regional Landfill through Transwaste Canterbury, a public private partnership half owned by five councils, including Christchurch City Council. Christchurch resource recovery facilities also service our neighbouring councils, providing regional economies of scale for major infrastructure.

We collaborate with other councils in the Canterbury region to plan, and implement, waste minimisation programmes through the Canterbury Waste Joint Committee and its Canterbury Regional Waste Management Agreement. The joint committee, with the assistance of Environment Canterbury, also coordinates regional management of hazardous waste. In the future we want to strengthen this collaboration, including developing regional approaches to shared opportunities.

2.4. Local situation

Christchurch has had a successful three-bin kerbside system since 2009, which has diverted approximately 65 per cent of household recyclable and organic materials from landfill. Through the kerbside collection service, Christchurch residents contribute approximately 20 per cent of the general waste sent to the Kate Valley Landfill each year, as shown in Figure 2 below. Commercial waste from transfer stations, both Council-owned and private, make up the majority of all waste to landfill.

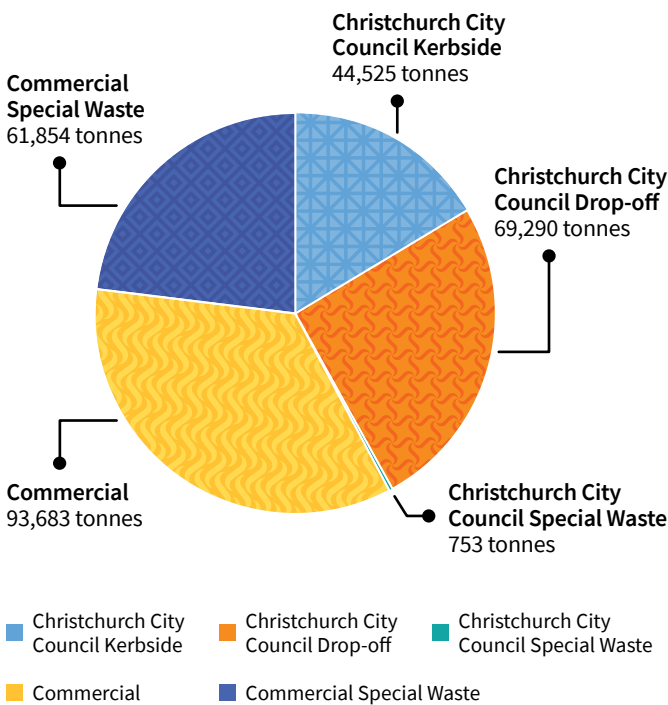


Figure 2. Total waste to Kate Valley Landfill in 2019

Christchurch City Council collections

Kerbside collections and transfer stations.



Generic commercial waste

Commercial collections and private transfer stations.



Special waste

Materials that may present a risk to human or animal health, including contaminated soil, treated timber, asbestos and medical waste.

The recent changes in international markets, including the decline in recycled product prices and higher quality standards, threaten the ongoing viability of recycling. Our current recycling process sorts and exports mixed paper and plastic with an average contamination level of five to eight per cent. Materials recovery facilities processing mixed recyclables were never designed to achieve the 0.5 per cent¹⁸ now required in some markets. There are limited options for onshore facilities to recycle some plastic resin codes. There are no paper mills in the South Island and the facilities in the North Island have no capacity for additional supplies of mixed paper.

To remain viable, EcoCentral, which processes Christchurch's recycling, has introduced a \$90 per tonne processing fee at the Material Recovery Facility. Current estimates show the required processing fee could increase to \$180 per tonne. Despite the significant cost, there is value in maintaining our current system through this period of market uncertainty, as it preserves our ability to meet the upcoming challenges in the recycling sector and reduces waste to landfill.

We have a composting operation for kerbside organics, whereby household food and garden waste is turned into certified organic compost. This compost is supplied to the agricultural and viticulture industries. The value of adding compost to soils can be measured in increased crop yield and carbon sequestration (the amount of carbon a plant can store.)

Climate change and waste minimisation

Maximising the use of existing products and materials is a vital part of reducing our emissions. The following greenhouse gas emissions targets have been set for Christchurch:

- Net zero greenhouse gas emissions by 2045, and a 50 per cent reduction from the 2016/2017 baseline levels by 2030 (excluding methane)
- At least a 25 per cent reduction in methane by 2030 and 50 per cent reduction by 2045 (from baseline year 2016/2017).

In 2017, nine per cent of our carbon footprint for the Christchurch community was caused by waste disposal¹⁹. This is the end-of-life carbon footprint of our resources and does not include the full lifecycle emissions impact of the products and materials that have become waste.

We have our own target of being net carbon neutral for our operations by 2030. A climate change strategy for the Christchurch district is under development that shows the importance of minimising waste as part of a transition to a low carbon and more circular economy.

Papatipu Rūnanga

Our relationship with Papatipu Rūnanga is guided by Te Tiriti o Waitangi-the Treaty of Waitangi. Through the implementation of this plan, we'll work closely with Papatipu Rūnanga as the Crown's treaty partners and support their kaitiaki (guardian) role.

There are six Papatipu Rūnanga who hold mana whenua in their traditional takiwā or territories that lie within our area of jurisdiction:

- Ngāi Tūāhuriri Rūnanga (takiwā also extends beyond our jurisdiction)
- Te Hapū o Ngāti Wheke (Rāpaki)
- Te Rūnanga o Koukourārata
- Ōnuku Rūnanga
- Wairewa Rūnanga
- Te Taumutu Rūnanga (takiwā also extends beyond our jurisdiction)

Mana whenua represents the ability to influence and exercise control over a respective area or region and act as its kaitiaki. Mana Whenua is derived from whakapapa, and protected and secured through:

- continued occupation of ancestral lands (ahi kā roa)
- continued use of resources (e.g. mahinga kai)
- protection of the mauri (life force) of resources and the environment for generations to come, as stated in the Ngāi Tahu whakatauki, 'mō tātou, ā, mō kā uri ā muri ake nei' (for us and our children after us).

To create an awareness and understanding of what is important to tangata whenua and why, the six Papatipu Rūnanga have developed the Mahaanui Iwi Management Plan, a mana whenua planning document that is an expression of kaitiakitanga and rangatiratanga (guardianship and leadership).

Within the Mahaanui Iwi Management Plan, waste management is primarily identified in the Issue of Significance (Issue P7) relating to Papatūānuku, the land, with cascading effects to other Issues of Significance throughout, reflecting the holistic management approach of ki uta ki tai (from mountains to the sea).

This section of the Mahaanui Iwi Management Plan provides guidance and awareness on specific issues associated with the disposal and management of waste. The associated policies highlight the opportunities for Papatipu Rūnanga to work with us in partnership to ensure that waste management and minimisation practices protect significant values such as mahinga kai and wāhi tapu and are consistent with Ngāi Tahu tikanga.

¹⁸ <https://www.mfe.govt.nz/sites/default/files/media/Waste/proposals-for-short-to-medium-term-responses-to-national-sword.pdf>

¹⁹ <https://ccc.govt.nz/assets/Documents/Environment/Climate-Change/Christchurch-Community-Carbon-Footprint.pdf>

3. Current and future challenges

We have identified three overarching challenges facing our resource recovery service and needing a response in this plan:

- 1. Selling our products:** our recycling system relies on being able to sell most of our products overseas. We need to find local solutions to manage our waste and resources sustainably.
- 2. Discrepancy between public expectation and delivery:** resource recovery services do not meet the growing expectations of residents for waste minimisation. We need to work with Central Government on waste minimisation initiatives and opportunities.
- 3. Valuing our resources:** products that are no longer wanted frequently go to landfill, when they, or their component materials, still have value. We need solutions that allow us to recover or reuse products and materials.

These challenges are not unique to Christchurch and the Government’s work programme for waste includes programmes that will lead or support our response. Each of the challenges is explored further below.

3.1. Selling our products

Our recycling system relies on being able to sell most of our products into international markets. We need to identify local processes and opportunities to manage our own waste and resources sustainably.

What are the current barriers?

- Size challenges and a lack of processing infrastructure for certain types of waste material. For example, the current fibre processing plant is in the North Island and at capacity. The South Island does not have the scale to establish a new paper mill capable of processing New Zealand’s excess fibre and the costs of such a plant are significant.
- As on-shore recycling of fibre is unlikely to be viable, we need to consider alternative processes.
- Some recyclable commodities, for example plastic with recycling symbol 1, 2 or 5 and glass already have good local markets or robust export markets (metals). Other material still needs to be exported, including mixed plastics (3, 4, 6 and 7). For more information on the symbols and what we can accept refer to

ccc.govt.nz/ourwaste

Key examples:

- Currently the Materials Recovery Facility, where material from the kerbside yellow bins is sorted into commodity products, is not designed to meet the increasingly tight contamination thresholds required internationally. Our current contamination rate of recycling received at the facility is usually between five and eight per cent, typical of a mixed recycling service where all material is collected in one container. This level of contamination exceeds the prescribed quality standards established under the China National Sword policy – maximum acceptable contamination rate of just 0.5 per cent.
- New international legislation under the Norwegian Amendment to the Basel Convention, restricts mixed recycling. This means we’ll need to further sort (or restrict) plastic resins in order to export our recycling.
- New Zealand’s population means we have little influence on international markets and rely on favourable market conditions for recycling commodities.

Government response:

In August 2020 the Ministry for the Environment announced \$16.8 million in funding for EcoCentral to update the optical and mechanical sorting machines used at the materials recovery facility. This will make it easier to remove contaminants and support the collection of high quality plastic and fibre materials.

Appendix A provides a summary of the Government’s work programme for waste including the response to the China National Sword policy.



3.2. Discrepancy between public expectation and delivery

Resource recovery services do not meet the growing expectations of residents for waste minimisation. We need to work with Central Government on waste minimisation initiatives and opportunities.

Key examples:

- From 1 July 2019, the Government banned retailers from supplying single-use plastic shopping bags under a certain thickness. This came from increased public awareness of the impact plastic has on our marine environment.
- The supermarket soft plastics recycling scheme was popular with consumers but failed when the international processor who recycled the materials stopped accepting them. The programme has been redeployed in the North Island at a relatively small scale, however is reliant on the demand for output products.
- Recycling costs are often not included directly in the purchase of goods. A shift towards producer responsibility, where a product manufacturer or retailer has greater responsibility for that product throughout its life cycle (including resource recovery/disposal) is needed. Central Government has identified priority waste streams suitable for the development of mandatory product stewardship programmes.
- We've developed a successful collection pilot for handheld batteries, which we hope will lead to a product stewardship programme for this waste stream. The collection programme has been well received with high public demand for the service (collecting over 600kgs of used batteries a month). We need businesses (manufacturers, retailers and importers) to take responsibility for these waste streams for such collections to be sustainable in the future.
- Resident surveys show good public support for the three-bin kerbside system. However, there is some confusion about which items can be recycled and inconsistent messages from different councils across the country.

Government's work programme on waste is focused on ensuring consistency across New Zealand. Currently there are differences in what can be collected, how items are collected and how items should be when they are collected. Two proposals are in public consultation focused on reducing the use of hard-to-recycle and single-use plastics.

A container return scheme is under design for beverage containers. It is an option to support a reduction in litter and waste to landfill through a financial incentive to return and recycle bottles/containers. There are several issues and options under consideration. If a decision is made to implement a container return scheme in New Zealand it is not expected to be in place until close to 2023.

3.3. Valuing our resources

Products that are no longer wanted frequently go to landfill, when they or their component materials still have value. We need solutions that allow us to recover or reuse products and materials. To get the best value from our resources we need to adopt circular approaches. Products and individual components need to be recovered and repurposed into other useful products that in turn can be reprocessed again.

Key examples:

- While the cost of landfill remains (relatively) low, there is little incentive to invest in alternatives. The Government is addressing this with an increased and expanded waste levy announced in July 2020.
- New Zealand is heavily reliant on imported goods, making it hard to influence the design of products and difficult to adopt circular processes.
- The 2018 audit of waste collected through kerbside and drop-offs at our public transfer stations showed that 39.6 per cent of total material going to landfill from our facilities could be diverted as recycling (29.9 per cent) and organics collections (9.7 per cent), as shown in Figure 4 in the Waste Assessment 2019 section. This is the equivalent of 46,000 tonnes that could have been diverted from landfill.

The life cycle of products, from extraction of the raw material through to the production process and distribution, varies hugely in terms of environmental impacts such as carbon emissions, energy and water use and bi-product waste. Plastics in particular have a significant emissions footprint, yet many are developed for single-use packaging.

Regulated product stewardship is a focus for Government with six priority products confirmed. These products are:

- Packaging
- Electronic waste (e-waste)
- Tyres
- Agricultural chemicals and their containers
- Farm plastics
- Refrigerants and synthetic greenhouse gasses

This is part of a wider programme to transition to a circular economy approach.

3.4. Transition challenges

Planning under uncertainty

This is a period of uncertainty for the resource recovery sector due to the ongoing changes in international recyclable product markets and the Government’s work programme on waste. We need to develop flexible responses to the challenges we face across the solid waste and resource recovery services that we deliver. We need to maintain an awareness of the risks and opportunities of Government policy decisions regarding waste minimisation and climate change.

Climate change adaptation and ongoing management of closed landfills

We manage approximately 120 closed landfills within our district. This involves monitoring and mitigating potential environmental effects (such as capturing landfill gas at the closed Burwood Landfill) and the risks posed by natural hazards and climate change. Fifteen closed landfills are in potentially vulnerable locations (e.g. in low-lying and coastal areas or near rivers). These are unlined, unsealed and contain unknown materials. They are vulnerable to coastal flooding, erosion, storm surge, rising ground water and increased river flows.

3.5. Operational challenges

Glass

The low price of glass and the transport costs of sending it to the North Island is a current barrier to recycling. Christchurch’s glass is used locally by the construction industry.

Providing a kerbside recycling service that includes glass, plastic and paper can contaminate the individual product types, e.g. broken glass in the mixed paper stream. This challenge is addressed in the feasibility study developed by EcoCentral and we will continue to explore the options.

Contamination

Our ability to divert waste from landfill relies on the correct use of our three-bin system. The quality of recycling determines whether the product can be on-sold. To combat contamination of our kerbside bins, we’ve developed a “gold star” recycling campaign, where people recycling correctly are recognised with a gold star on their bins. This has been well received publicly and identifies everyone’s contribution to effective resource recovery. Problematic items that end up in the recycling bin include soft plastics, lids, steel items, nappies, organic waste and general household items.

We operate a three-strike system for repeat contamination of recycling or organics bins. This provides us with the opportunity to educate residents who may be unaware of which items can go in each bin, prior to removing the service.

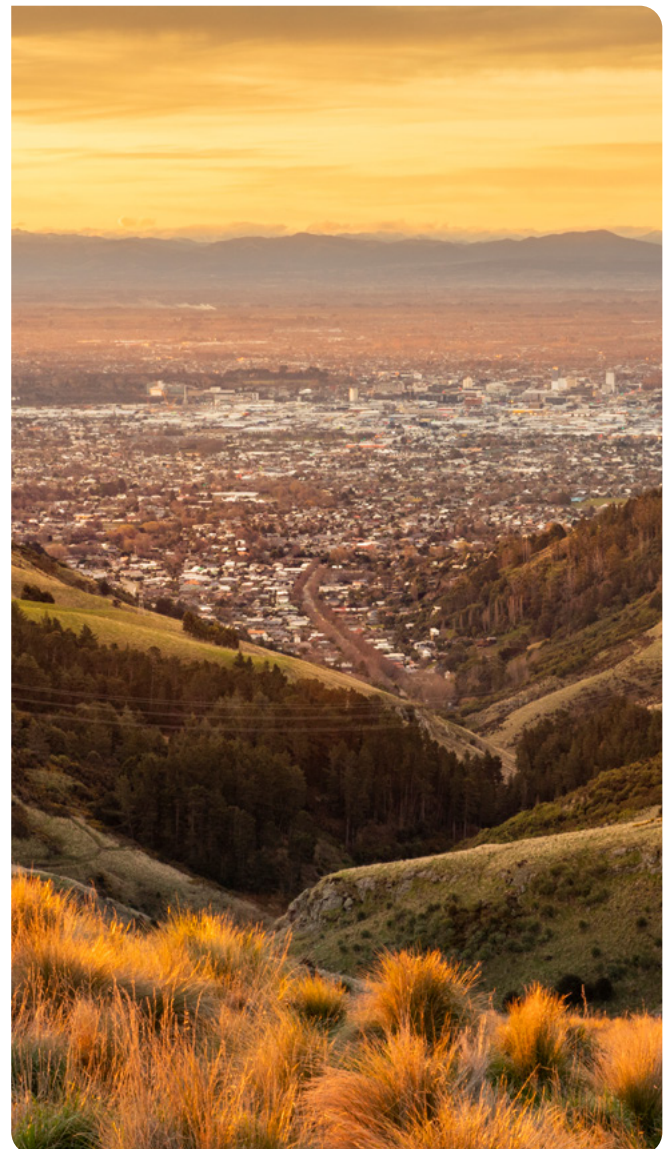
Bromley odour

In June 2020, Environment Canterbury released findings of a pilot study focused on identifying sources of odour in Bromley. The pilot study findings identified two facilities – the Living Earth Organics Processing Plant and the EcoCentral EcoDrop – as significant odour emitters.

In response to the findings, we’ve worked with EcoCentral and Living Earth to develop an action plan outlining the short, medium and long-term options to mitigate odour at these facilities.

Impacts of Covid-19

The COVID-19 pandemic has caused economic upheaval, globally and nationally. The response has had a direct impact on resource recovery, including the temporary closure of facilities during the lockdown, lack of access to and uncertainty regarding overseas markets, and increased contamination challenges post-lockdown.



4. Moving up the waste hierarchy

The role of local authorities in regards to waste has traditionally been about waste disposal, transitioning over time into recycling and recovery.

While Christchurch currently diverts 65 per cent of kerbside materials from landfill, achieving our vision of moving towards zero waste and a circular economy will require a fundamental change in our consumption habits. This includes a shift in the way we think about, and subsequently respond to, what we currently refer to as waste.

To achieve our vision we need to take collective responsibility for waste produced. We will continue to provide effective and efficient systems that utilise the value of materials which are disposed of. We will expand our focus towards the reduction of waste generated, reducing the volumes of material we receive.

As we move up the waste hierarchy, provided in Figure 3, the role of local authorities changes. The direct involvement of service delivery for councils will reduce as individual responsibility for waste generation changes.

To support this transition we see a stronger role and significant opportunity to provide leadership and support to organisations and communities. Over time the focus will move away from waste minimisation and recovery to valuing our resources, only buying and using what we need and keeping what we have in use as long as we can.

Our 2019 waste assessment shows why we are still focused on increasing the effectiveness of our resource recovery and waste diversion systems. To achieve a more circular economy we need to support reduction of waste in the first place and although there are many organisations providing reduction education and reuse opportunities, greater focus is required in order to have the impact we need.

Key actions to address this are identified in the action plan and include a focus on promoting innovation and reuse initiatives in Christchurch.

Waste hierarchy

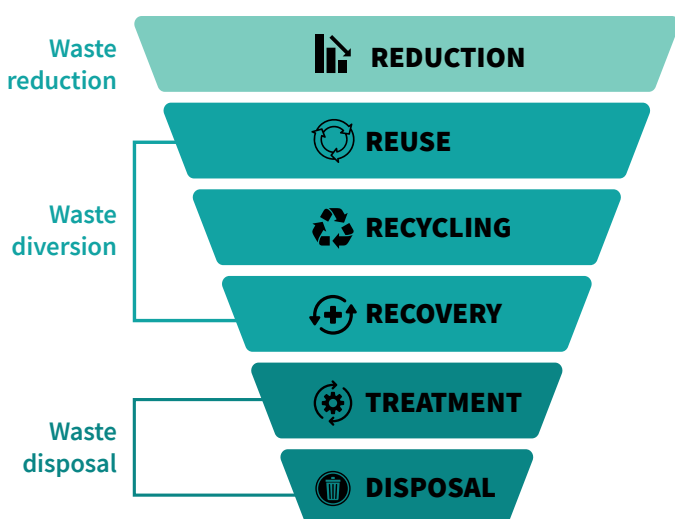






Figure 3: Waste hierarchy

-  **REDUCTION**
Reducing waste generation
-  **REUSE**
Further use of products in their existing form for their original purpose or a similar purpose
-  **RECYCLING**
Reprocessing waste materials to produce new products
-  **RECOVERY**
Extraction of materials or energy from waste for further use or processing, including but not limited to, making materials into compost
-  **TREATMENT**
Subjecting waste to a physical, biological, or chemical process to change the volume or character of that waste so it can be disposed of with no, or reduced, significant adverse effect on the environment
-  **DISPOSAL**
Final deposit of waste on land set apart for that purpose

5. Our vision, goals and objectives

Our vision

Ōtautahi-Christchurch is a sustainable city,
working towards zero waste and a circular economy

Our guiding principles



Pare kore – Zero waste

Zero waste is about how we responsibly make and use products, minimising social or environmental harm. This includes avoiding damages resulting from greenhouse emissions or discharges to land or water.



Ōhanga āmiomio – Circular economy

A circular economy is the idea that all products can be made so that at the end of their initial use they have a value (e.g. can be re-used, recycled or repurposed). This reduces waste, pollution and greenhouse gases.



Rangatiratanga – Leadership

We will demonstrate leadership and best practice in minimising and managing waste. This includes continually improving our own operations, and working with our partners and communities to develop and implement solutions.



Kaitiakitanga – Guardianship

As partners, we will work with Papatipu Rūnanga, to share responsibility to ensure the life-supporting functions of the environment are maintained and protected for those who come after us. Sustainable waste management and minimisation protects our environment.



Ngātahitanga – Collaboration

We will work with groups and organisations on initiatives to minimise waste, recover resources and progress our vision for zero waste.



Te tatanga mātāpono – The proximity principle

This is about using local and national resource recovery solutions, where possible. Reducing reliance on international markets provides environmental and economic benefits.

To help achieve our vision, we've developed the following goals and objectives:

Goals

- Everyone has access to recycling, resource recovery and waste management services
- Businesses and individuals understand that reducing and minimising waste is their responsibility, as well as ours
- Valuable resources are reused or recycled and don't go to landfill.

Objectives

1. Make sure our waste management facilities and services maximise resource recovery and avoid adverse effects to people and the environment.
2. Make sure our kerbside recycling and organics collection has minimal contamination levels, allowing for sorting of products, which are then suitable for processing or sale. This creates long-term economic benefits.
3. Collaborate with industry operators and Central Government, to support a regional and national transition to zero waste and a circular economy.
4. Reduce our reliance on overseas markets for recyclable materials
5. Make sure our waste, recycling and organics facilities support our climate change targets. These are zero net greenhouse gas emissions, and to halve the 2016 baseline for methane, by 2045.



6. How we'll achieve the vision

The key methods that we will use to achieve the vision are:

- Supporting and leveraging Central Government's work programme
- Service delivery review
- Council's action plan
- Working together

In addition to the summaries below, further detail on each of our methods is provided at ccc.govt.nz/ourwaste. It is a living document.

6.1. Supporting and leveraging Central Government's work programme

The Government is investing in resource recovery infrastructure including \$16.8 million in funding for EcoCentral to update the optical and mechanical sorting machines used at the Materials Recovery Facility. Central Government's work programme on waste has a number of key components, as outlined in Appendix A. It addresses key issues across the sector including producer responsibility, incentives to reduce waste disposal, national consistency and better value resources.

We are working closely with Central Government and industry to develop the design and implementation of areas within the work programme.

6.2. Service delivery review

Section 17A of the Local Government Act outlines the requirements of local authorities to regularly review their services. The review is focused on governance, funding and delivery options that help improve cost effectiveness.

In June 2020, we decided to carry out a service delivery review of solid waste services. The review is expected to start in October 2020 with final recommendations going to the Finance and Performance Committee.

The challenges facing solid waste services have been identified during the development of this plan and a number of actions required to fulfil the vision can be delivered through the s17A review process including:

- Funding mechanisms designed to support and incentivise waste minimisation
- Review of the current kerbside collection including opportunities for increased flexibility for bin sizes and separated glass collection

- Opportunities to increase the quantity and viable inputs for organics processing
- Expansion of education to schools and organisations

6.3. Council's action plan

A detailed action plan provides both immediate short-term actions and a responsive approach to waste sector challenges. It will be reviewed and updated regularly to ensure we're able to adapt and respond to the changes in resource recovery nationally and internationally. Progress against these actions will be reported to Council on a bi-monthly basis.

The actions are grouped into five themes with the following actions receiving immediate focus:

Theme 1: Maximising composting of organics

- Improve operations at the Organics Processing Plant to accept more products, address processing capacity and odour challenges
- Improve access to our organics services
- Identify new collection systems for inner city organics

Theme 2: Maximising recycling of recyclables

- Work with Central Government on developing their waste work programme
- Identify new collection systems for inner city recycling
- Support on-shore processing of recycling, including solutions for glass, mixed plastic and paper
- Council work programme to manage contamination (<10%)

Theme 3: Safe management of hazardous substances

- Promote safe disposal options for hazardous materials
- Expand the collection and recovery of handheld batteries based on the successful Christchurch pilot
- Safely manage all former landfills for ongoing environmental protection
- Regulate waste operations within Christchurch, utilising the Solid Waste Bylaw 2015
- Adopt a regional approach to litter and illegal dumping

Theme 4: Leadership and innovation in the Christchurch waste and resource recovery sector

- Work with industry to promote waste minimisation and resource efficiency across the commercial sector
- Collaborate with Papatipu Rūnanga and organisations, to support a regional transition to zero waste and a circular economy
- Support for community and environmental organisations through funding schemes and programmes
- Promote and fund innovation in the waste and resource recovery sector through the Canterbury Waste Joint Committee's annual contestable waste minimisation fund
- Collaborate with the joint committee for regional outcomes
- Lobby Central Government on continued work programme for waste
- Work with stakeholders to promote a circular economy
- Service delivery review (funding mechanisms to support and incentivise waste minimisation and collection models)
- Embrace new technology for a better resource recovery system and promote a circular economy
- Address climate change emissions targets
- Procurement processes that focus on waste reduction

Theme 5: Effective resource recovery education and communications

- Increase communication and incentives for keeping waste out of landfill
- Continuous improvement of behavioural change programmes
- Provision of school-targeted education
- Provision of education via our facilities
- Create a common language around valuing our resources

6.4. Working together

As well as maximising opportunities provided through the Government's work programme for waste, we need to work with Papatipu Rūnanga, local organisations and other councils to reduce our dependence on international markets for recyclable materials and invest in infrastructure for local solutions. Regional and national collaboration will be essential to minimise waste and achieve our vision for a sustainable Ōtautahi-Christchurch, working towards zero waste and a circular economy.

Developing innovative approaches to managing waste is critical to maximising the use of existing resources and developing viable alternatives to landfill. As a local Council, we're responsible for managing waste that our communities produce. In addition, we're able to act as a facilitator, helping the community to:

- Create an environment to more effectively manage resources and promote resource recovery
- Reduce the waste produced by individual households and organisations

We work closely with other public sector partners and community organisations to develop and support initiatives that support our vision towards zero waste and a circular economy.

Some of our partnerships include:

- Central Government
- Papatipu Rūnanga
- Other local authorities and the Canterbury Waste Joint Committee
- Canterbury District Health Board
- Industry representatives, including WasteMINZ, Local Government New Zealand, our contractors and other waste providers
- Research organisations and consultants, including universities, research institutes and sector interest groups
- Community groups and non-governmental organisations

By working together, we can better understand the challenges and opportunities to rethink our current approach to resource use and develop a collective foundation for change.

7. Funding the plan

Our resource recovery services, including the mechanisms we will use to achieve our vision for this plan, are funded through rates (providing flexibility for different service levels), fees and charges, and levy revenue.

7.1. Rates

Rate charges pay for various waste services. These include: transfer stations, kerbside collection, processing and disposal costs, waste minimisation and education activities and landfill aftercare. The current 2020 charges are:

- Uniform Annual General Rate - \$132 per year
- Waste Minimisation Targeted Rate - \$203.85 (part charge \$152.89)

In respect of the rates revenue, residual waste is part-funded by the uniform charge, while recycling and organics are funded by the targeted rate.

Currently there are approximately 165,000 rating units charged the uniform charge and approximately 153,000 paying the targeted rate. As part of a service delivery review of resource recovery services, differential charging, including the ability to motivate waste reduction through user pays, will be considered.



7.2. Inner-city kerbside collection

The price of the inner-city recycling and rubbish bags covers the cost of providing this service. Charges are reviewed annually with current 2020 charges are:



Rubbish (red) bags are 50 litres and cost **\$13.40** for a pack of five.



Recycling (yellow) bags are 50 litres and cost **\$5.43** for a pack of five.

7.3. Waste levy

For every tonne of waste sent to landfill, the Government currently applies a \$10 levy under the Waste Minimisation Act 2008. In 2019, Government signalled that they were looking to expand this levy to all sites and implement a staged increase in the rates charged.

Based on the current tonnages sent to landfill, we contribute approximately \$1.14 million in levy payments. Half the total levy collected is made available in an annual contestable fund (Waste Minimisation Fund) with the remainder distributed to councils on a per-capita basis.

Through the levy, we currently receive approximately \$1.4 million each year to promote waste minimisation in line with this plan.

Table 1 below shows the impact of the levy. This does not take into account the reduced tonnage that the levy is expected to achieve. However, even with reduced volumes to landfill, it is expected that this mechanism will provide increased funds to support waste minimisation and the delivery of our action plan.

Table 1. Impact of changes to levy rates and revenue

	Levy rate	Tonnage (Council)	Cost	National levy revenue	Return rate	Levy revenue (return to Council)	Net Council revenue*
Current (2020)	\$10.00	114,000	\$1,140,000	\$35,000,000	4.2%	\$1,456,000	\$316,000
Proposed (2024)	\$60.00	114,000	\$6,840,000	\$270,000,000	4.2%	\$11,209,000	\$4,369,000

* Allocation to waste minimisation activities

7.4. Canterbury Waste Joint Committee grants funding

The Canterbury councils have formed the Canterbury Waste Joint Committee to coordinate regional collaboration across the resource recovery sector. A major role of the committee is the contribution to, and administration of, an annual contestable fund. Established under section 47 of the Waste Minimisation Act 2008, the fund provides grants to innovative projects that deliver waste minimisation objectives.

Approximately \$112,000 annually is allocated by the Canterbury Waste Joint Committee to support innovation and regionally applicable waste minimisation projects.

7.5. Revenue from divertible materials and recovery facilities

Revenue generated across our resource recovery facilities offsets operational costs. This includes a rebate paid on incoming commercial tonnages at the Organics Processing Plant and a gate fee at the Burwood Resource Recovery Park. While contributions from each facility vary, they do help offset the cost of our services.

For example, revenue generated by the Burwood Resource Recovery Park (approximately \$3 million per annum) contributes to the expense of both operating the facility, and rehabilitating the site after it closes at the end of 2020. The provision of a disposal facility for waste generated from the Canterbury earthquakes has directly supported the recovery process. It's also significantly reduced transportation of soil, construction and demolition materials that would otherwise be sent to the Kate Valley Landfill.



Part 2. Background

The following has been used as a foundation for developing the plan:

- Legislative context for the Waste Management and Minimisation Plan
- 2019 Waste Assessment and Audit
- Commissioned reports that have provided support and direction for this plan
- Review of the 2013 plan, focused on achievement of targets and key actions
- Key contracts that support the delivery of our waste and resource recovery services
- Operational policies and targets.

8. Legislative context

There are statutory requirements and international agreements that frame our approach to the plan.

Waste Minimisation Act 2008²⁰

The Act encourages waste minimisation and a decrease in waste disposal in order to protect the environment from harm; and provides environmental, social, economic and cultural benefits.

The Act outlines the responsibilities of territorial authorities in relation to waste management and minimisation, including:

- Promoting effective and efficient waste management and minimisation within their districts and
- Spending the funding provided by the national waste disposal levy on matters to promote or achieve waste minimisation in accordance with the Waste Management and Minimisation Plan.

The New Zealand Waste Strategy 2010²¹

This provides direction to local councils, businesses (including the waste industry), and communities on ways to:

- Reduce the harmful effects of waste to the environment and human health
- Improve the efficiency of resource use
- Capitalise on potential economic benefits.

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 Landfill), which includes recent amendments made by the Climate Change Response (Zero Carbon) Amendment Act 2019
- The Health Act 1956
- Litter Act 1979
- Health and Safety at Work Act 2015
- Ozone Layer Protection Act 1996
- Imports and Exports (Restrictions) Act 1988
- Customs and Excise Act 2018
- Biosecurity Act 1993.

There are several international agreements that New Zealand is party to that may affect the import and export of waste including recyclable materials, including:

- Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol)
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal
- The Convention to Ban the Importation into Forum Island Countries of Hazardous and Radioactive Wastes and to Control the Transboundary Movement and Management of Hazardous Wastes within the South Pacific Region (Waigani Convention)²²
- Organisation for Economic Coordination and Development Decision C(2001)107/FINAL (OECD Hazardous Waste Decision)
- Stockholm Convention on Persistent Organic Pollutants.

²⁰ <http://www.legislation.govt.nz/act/public/2008/0089/latest/DLM999802.html#DLM1154619>

²¹ <https://www.mfe.govt.nz/waste/waste-strategy-and-legislation/new-zealand-waste-strategy>

²² <https://protect-au.mimecast.com/s/r18iC91W2MtmREIDho2He2?domain=mfe.govt.nz>

²³ <https://ccc.govt.nz/the-council/plans-strategies-policies-and-bylaws/bylaws/waste-management-bylaw-2009>

²⁴ <https://ccc.govt.nz/the-council/plans-strategies-policies-and-bylaws/bylaws/cleanfill-waste-bylaw-2015/>

Council bylaws

The following bylaws relate to waste minimisation and management:

Waste Management Bylaw 2009²³: The purpose of this bylaw is to prevent the contamination of recyclable materials (including those collected through the kerbside collection service) and maximise their use. It is also to ensure the safe and efficient collection of waste and to prevent waste becoming a problem.

Cleanfill and Waste Handling Operations Bylaw 2015²⁴: The purpose of this bylaw is to:

- Regulate and monitor operators collecting, managing, storing and using cleanfill and waste within the city through a licensing process
- Protect, promote and maintain public health and safety
- Provide comprehensive data and information for planning and waste management and minimisation purposes.

Other relevant documents

Mahaanui Iwi Management Plan 2013

Ngāi Tahu rūnanga have created the Mahaanui Iwi Management Plan to guide councils' decisions about the environment and protection of resources. The plan outlines the specific (tikanga) cultural issues associated with the disposal and management of waste. These include the need for waste management practices to protect cultural values such as mahinga kai and wahi tapu and the requirement for waste minimisation to be a basic principle of, and approach to, waste management.

Canterbury Regional Policy Statement 2013

This provides an overview of the resource management issues in the Canterbury region, and the objectives, policies and methods to achieve integrated management of natural and physical resources. Specific chapters (18–19) address Hazardous Substances and Waste Minimisation and Management.

9. Waste assessment 2019

The 2019 Waste Assessment reviews the waste that is received from the kerbside collections and transfer stations we provide and outlines options for meeting future demand²⁵.

To understand the potential for waste diversion from landfill, we commissioned EcoCentral to complete two audits on our 2018 waste collections. The audit results, shown in Table 2, describe the types and quantities of materials discarded via our collection system.

Table 2: Recoverable and non-recoverable waste sent to landfill 2018.

	Kerbside (Kg)	Kerbside (%)	Transfer station (Kg)	Transfer station (%)	Total waste to landfill (tonnes)*	Per cent of total waste to landfill (%)
Compostable green waste	2195.47	11.28	623.24	6.43	11,100	9.67
Food waste	10.6	0.05	3.45	0.04	55	0.05
Recyclable plastics ²⁶	2063.88	10.60	884.97	9.13	11,612	10.11
Recyclable paper/cardboard	3260.33	16.75	1283.35	13.24	17,893	15.58
Glass bottles/jars	283.11	1.45	97.58	1.01	1,499	1.31
Ferrous metals	237	1.22	274.52	2.83	2,014	1.75
Non-ferrous metals	171.16	0.88	153.72	1.59	1,279	1.11
Aerosol cans	0.89	0.00	3	0.03	15	0.01
Rubbish ²⁷	9373.11	48.15	3316.3	34.21	49,969	43.51
Timber	369.7	1.90	2011.95	20.76	9,379	8.17
Clothing, textiles	1061.93	5.45	562.46	5.80	6,397	5.57
Electronic waste	317.11	1.63	339.04	3.50	2,584	2.25
Concrete, ceramics, rubble	103.95	0.53	117.66	1.21	873	0.76
Domestic batteries	9.5	0.05	0.95	0.01	41	0.04
Household hazardous waste	10.75	0.06	20.5	0.21	123	0.11
Total	19,468.49	100%	9,692.69	100%	114,833	100%

*Extrapolated based on audit results

²⁵ <https://www.mfe.govt.nz/sites/default/files/media/Waste/wmmp-guide.pdf>

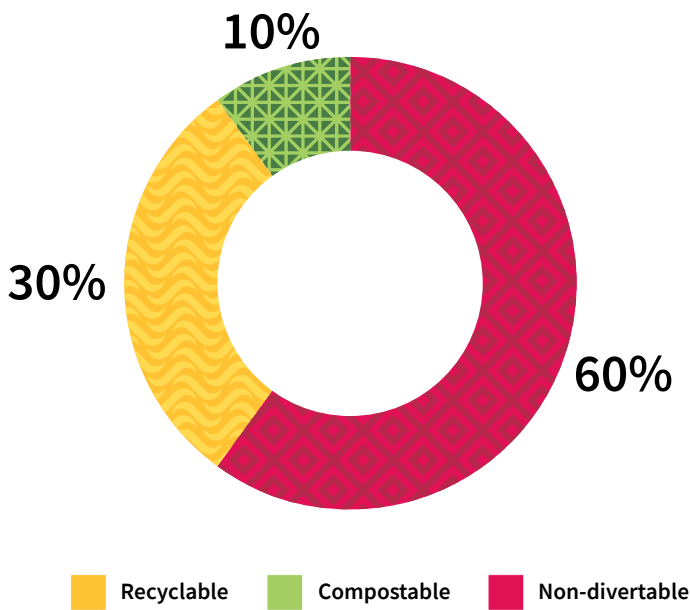
²⁶ Recyclable plastics able to be recycled has recently been reduced to 1 – PET, 2 – HDPE, 5 – PP). The waste audit may over represent the amount that is able to be recovered.

²⁷ Includes non-compostable green waste, soft plastics and polystyrene that our resource recovery facilities are currently unable to process

The 2018 waste audit (Table 2) shows that:

- 39.6 per cent of total material going to landfill from our facilities could be diverted as recycling (29.9 per cent) or organics collections (9.7 per cent), as shown in Figure 4. This is the equivalent of 46,000 tonnes that could have been diverted from landfill.
- From our kerbside collection, the landfill diversion potential was 31 per cent recyclable, 11 per cent organics.
- From the transfer station, the landfill diversion potential was 28 per cent recyclable, six per cent organics.

Total waste to landfill



Further waste reduction could be achieved through a targeted programme. We've developed a collection network for batteries and provide household hazardous waste and electronic waste disposal facilities at our EcoDrop Recycling Centres. Other waste reduction opportunities to explore include:




	Timber recovery (including treated timber)	8%
	Textile recovery/recycling	5.5%
	Electronic waste	2.25%

Figure 4: Total waste to landfill



10. Commissioned reports

10.1. Waste Management and Minimisation Blue Sky Scan

In 2019, we commissioned a blue-sky thinking study to understand the potential longer-term direction for resource recovery services. A series of hypothetical scenarios was scrutinised to inform and future-proof this plan. Through the scenarios, 11 recommendations were developed that have informed our action plan. A summary of this report is provided on our website

ccc.govt.nz/ourwaste

10.2. Waste to energy study

In 2017 we commissioned a study aimed at:

- considering potential alternatives to landfill, including waste to energy
- providing a better understanding of the potential responses to the changing recycling market
- exploring future opportunities for managing Canterbury's waste and recycling.

A summary of this report is provided on our website

ccc.govt.nz/ourwaste

10.3. EcoCentral feasibility study

EcoCentral has developed a feasibility study looking into the future of recycling within Christchurch and parts of Canterbury. It includes the following options for consideration:

1. Exclusion of glass from kerbside recycling collection to increase paper quality
2. Exclusion of certain plastics from kerbside recycling collection (resin codes 3,4,6,7) to increase the commodity value of mixed plastic
3. Investing in additional sorting technology at the Materials Recovery Facility for mixed plastics and fibre (paper and cardboard) to minimise contamination
4. Waste to energy opportunities for residual processing waste

We're working with EcoCentral on these options and opportunities. We are focussing on maintaining our current markets while looking at on-shore alternatives.

10.4. Living Earth feasibility study

We're looking at alternative disposal options for paper and cardboard. This could involve composting paper through the Living Earth facility should markets for recycling fail. If possible, this could lead to the potential inclusion of paper and cardboard in the kerbside collection system.



11. Review of the 2013 Waste Management and Minimisation Plan

Our last Waste Management and Minimisation Plan, completed in 2013, included a set of targets and an action plan. This section provides a summary of achievements against these targets and actions.

11.1. Kerbside collections

We have a three-bin collection service for rubbish, recycling and organics. This service is well established, diverting over 65 per cent of residential kerbside waste from landfill. The 2020 General Services Satisfaction Survey identified kerbside collection as one of our top performing services, where satisfaction levels are 85 per cent or higher.

Diversion from landfill through the kerbside recycling and organics collections is over 228kg per person, compared to 115kg per person sent to landfill. Figure 5 shows the trend from 2010 until 2019 for kerbside collection volumes.

Kerbside collections kilograms per person 2010 to 2019

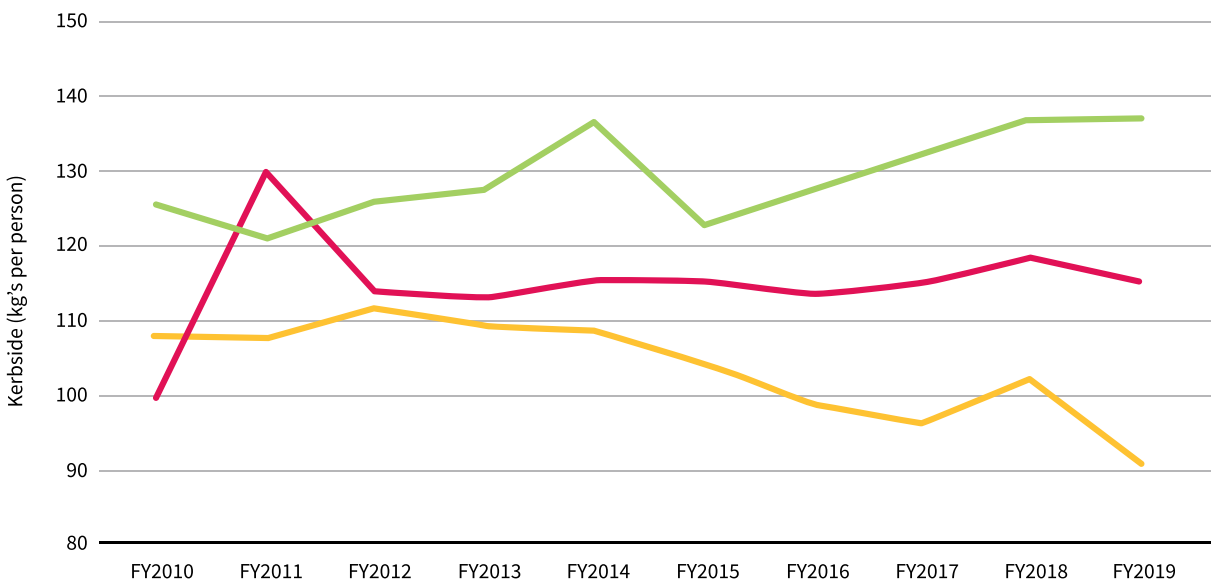


Figure 5. Trend from 2010 to 2019 of kerbside collection volumes

11.2. Waste diversion targets

Overall we have succeeded across the targets set in the 2013 plan, however the planned reduction in waste disposal has not been achieved. Key targets are provided in Figure 6 below.



Organics:



No more than 30kg/person of recoverable green and kitchen waste sent to landfill by 2020.

Current performance:
11.5kg/person

Recyclables:



No more than 30kg/person of recoverable paper and cardboard sent to landfill by 2020.

Current performance:
18.5kg/person

None set for plastics due to only 5kg/person sent to landfill in 2012.

Current performance:
12.0kg/person

Waste:



No more than 80kg/person of kerbside waste collected is sent to landfill by 2020.

Current performance:
115kg/person*

*The predicted reduction in waste to landfill has not occurred.

Compared to the national situation we are doing well, with no increase in kerbside and a reduction in total waste:



740kg per capita
(national waste to landfill)



540kg per capita
(Christchurch waste to landfill)

Figure 6. 2013 Waste targets

11.3. Key action areas since 2013

Here's a snapshot of some of the key methods we've used to reduce waste to landfill, following the 2013 Waste Management and Minimisation Plan. Many of the activities discussed below are continuing programmes under this plan.

Education and raising awareness

Education and raising awareness are an important way to reduce the amount of waste that gets sent to landfill. Our programmes include:

Learning through Action

We offer a range of environmental programmes, including waste minimisation, free to schools. The programmes provide relevant and authentic learning experiences through hands-on activities, linking to the school curriculum and focusing on sustainability. Learning through Action is supported by the Ministry of Education as a Learning Experiences Outside The Classroom provider.

Four waste reduction Learning through Action programmes are delivered to all schools (200) in the Christchurch area:

- “Watch your Waste”
- “A Waste of Time”
- “Casting Magic with Worms”
- “Fertilising for the Future”

Throughout the last seven years (2013–2020) 18,698 students have been through our education programmes.

Education is provided to various additional groups, with the Learning through Action team able to cater to specific requests.

Contamination auditing

We have an education programme focused on reducing contamination in the kerbside bins. Our current programme focuses on ensuring that only the correct, clean items go in the yellow bin²⁸. By improving the quality of residential recycling, through direct kerbside education, more recycling is able to be processed and less material has to go to landfill.

Battery collection and recycling pilot

The components in batteries are harmful for the environment. They also pose a significant risk to kerbside bins and waste processing infrastructure, with Lithium-ion battery being an emerging issue. We initiated a battery recycling scheme, enabling batteries to be disposed of safely. Batteries can be dropped off for free at seven locations across the city. As there are currently no viable recycling options in New Zealand, batteries are collected, sorted and prepared for shipping overseas²⁹.

Love Food Hate Waste

This is a nationwide campaign aimed at reducing household food waste³⁰. WasteMINZ has partnered with 60 councils, including us, community groups and the Ministry for the Environment to deliver Love Food Hate Waste. Information provided includes recipes, practical tools, tips and techniques focused on reducing the amount of household food thrown out.

Waste minimisation for our operations

Our internal Resource Efficiency and Greenhouse Gas Emission programme focuses on being resource efficient and reducing greenhouse gas emissions from our activities.

Target Sustainability

Our Target Sustainability service assists Christchurch businesses to reduce solid waste and greenhouse gas emissions, and to be energy and water efficient³¹. We worked with Government agency the Energy Efficiency and Conversation Authority, to deliver sustainable design advice on more than 500,000 square metres of commercial buildings.

Case study:

Lancaster Park stadium deconstruction

A large amount of material was recycled and recovered during the deconstruction of Lancaster Park. As a result, less than 2 per cent of material went to landfill (1880 tonnes out of about 100,000 tonnes of overall waste).



Boilers were reused to power the hot pools at Franz Josef.



Over 18,000 of the 30,808 seats were rehomed to community groups and individuals and the remainder recycled.



Concrete hard fill was used in the Lyttelton port reconstruction, a significant offset to mining these resources.

²⁸ CCC Bin good <https://ccc.govt.nz/services/rubbish-and-recycling/yellowbin/how-good-have-we-bin/>

²⁹ CCC battery recycling <https://ccc.govt.nz/services/rubbish-and-recycling/learning-resources/batteryrecycling/>

³⁰ Love Food Hate Waste <https://lovefoodhatewaste.co.nz/>

³¹ <https://ccc.govt.nz/environment/sustainability/target-sustainability>

12. Solid waste and resource recovery contracts

A summary of key contracts is provided in figure 6 below:

Contract	Type of Service	Length	Period
Waste Management NZ Limited	Operates transfer stations in Banks Peninsula (waste and recycling stations) under contract	15 years + 5 year-term right of extension	1/05/2008 to 31/05/2029
	Operate assets associated with kerbside collection of waste, recyclables and organics	15 years + 5 year-term right of extension	31/01/2009 to 31/01/2029
Living Earth Limited	Contracted to lease, operate and maintain the organics processing plant	15 year contract + 2 year extension	31/01/2009 to 31/01/2024
EcoCentral Limited	Operate EcoDrop transfer stations (3 sites)	10 years + 2 year-term right of renewal	1/7/2014 to 31/01/2024
	Own and operate the Materials Recovery Facility and glass screening plants - Ownership of this facility passes back to Council in 2024	15 years + 2 year-term right of extension	31/01/2009 to 31/01/2024
	Operate the EcoShop for reusable materials	15 years + 2 year-term right of extension	31/01/2009 to 31/01/2024
Transwaste Canterbury	Operate the Kate Valley Regional Landfill – a memorandum of understanding exists requiring all Council residual waste to go to Kate Valley	20 years (MOU)	2005 to 2025
	Operate the Burwood Resource Recovery Park – closed for new materials from December 2020	5 year fixed term contract, + 5 rights of renewal for 1 year each	2011 to 2021

Figure 6. A summary of our contracts



13. Operational policies and targets

This plan fits within our broader framework of strategies and policies relevant to waste minimisation and management.

13.1. Existing council policies

Resource Efficiency and Greenhouse Gas Emission policy³²

Our Resource Efficiency and Greenhouse Gas Emissions policy includes a commitment to continually and systematically improve our performance in solid waste generation through the implementation, monitoring and review of policies, processes and services.

Sustainability Policy³³

This provides an operational definition of the term sustainability so that we can more consistently apply it to our activities. It identifies the need to be more efficient with resources, circular in our approach to material and fully powered by renewable energy sources and eliminating harm to people and the environment. This in turn enables us to meet social needs now, and into the future.

Sustainable Procurement Policy³⁴

In 2019, we launched our Sustainable Procurement Policy – a different way of looking at how we select products, contract works and services. The policy focuses on sustainability in procurement, aimed at enhancing the environment, including minimising waste, and improving social and economic aspects of life in Christchurch.

Free Waste Dumping Policy³⁵

This is around managing requests for free or reduced-fee waste disposal. Free waste disposal is provided for community clean-ups when there is a public benefit.

13.2. Operational targets

The Long Term Plan 2021-31 will include level of service targets for resource recovery services. These are focused on continuous improvement and do not rely on large-scale change either at Government level or to our services or facilities. Additional targets have been set within the action plan that focus on addressing the broader, strategic challenges in the journey towards zero waste and a circular economy.

³² <https://ccc.govt.nz/assets/Documents/Environment/Climate-Change/Resource-Efficiency-and-Greenhouse-Gas-Emission-Policy-2018.pdf>

³³ <http://ccc.govt.nz/the-council/plans-strategies-policies-and-bylaws/policies/sustainability-policies/sustainability-policy/>

³⁴ <https://ccc.govt.nz/the-council/plans-strategies-policies-and-bylaws/policies/council-organisational-policies/procurement-policy>

³⁵ <https://ccc.govt.nz/the-council/plans-strategies-policies-and-bylaws/policies/rubbish-and-recycling-policies/free-waste-dumping/>

Appendix A

Central Government Waste Work Programme

In 2018, a taskforce was established in response to the Chinese government's effective ban on the import of many recycling materials. The taskforce's report recommendations³⁶ are now part of the Ministry for the Environment's work programme³⁷:

- Forming a plan to phase out low-value and hard-to-recycle plastic packaging
- Design of a New Zealand beverage container return scheme³⁸
- Expanding and improving the waste disposal levy (landfill levy) to more of New Zealand's landfills and improving our data on waste^{39, 40}
- Improve kerbside and commercial recycling, reduce contamination of recyclables so more materials can be recovered, and increase onshore processing of plastics and other materials⁴¹
- Analysing where investment in innovation and resource recovery infrastructure is most needed to support New Zealand's transition to a circular economy approach.
- Developing a national circular economy strategy, starting with priority sectors where the greatest benefits can be gained from transitioning to a circular economy approach.
- Implementing product stewardship schemes for problematic waste streams including vehicle tyres, e-waste (starting with lithium-ion batteries), agrichemicals and synthetic greenhouse gases.⁴²

Proposals for short to medium-term responses to China National Sword Policy⁴³ have been developed. The proposals consider national options to manage the effects of fluctuations in recycling material commodity prices on our resource recovery sector. The impacts of price changes are felt internationally, with Australia's experiences and responses reflected in the report. Possible identified responses include:

- Education to reduce contamination
- Review domestic kerbside collection systems and stop collecting plastic grades 3-7 (limited viable markets)
- National facility licence limits (improves data capture and material recovery facilities coordination)
- Regulate recyclability of packaging
- Regulate recycled content of packaging.

In response to these challenges, there is a greater focus on working towards a circular economy approach. This is the idea that all products can be made so that at the end of their initial use they have a value (e.g. can be re-used, recycled or repurposed). This reduces waste, pollution and greenhouse gases.

³⁶ <https://www.mfe.govt.nz/publications/waste/national-resource-recovery-project-situational-analysis-report>

³⁷ <https://www.mfe.govt.nz/waste/waste-and-government>

³⁸ <https://www.mfe.govt.nz/waste/new-zealand-container-return-scheme>

³⁹ <https://www.mfe.govt.nz/waste/waste-disposal-levy>

⁴⁰ <https://www.mfe.govt.nz/consultations/landfill-levy>

⁴¹ <https://www.beehive.govt.nz/release/plan-recharge-recycling>

⁴² <https://www.mfe.govt.nz/consultations/priorityproducts>

⁴³ <https://www.mfe.govt.nz/publications/waste/proposals-short-medium-term-responses-national-sword>

⁴⁴ <http://web.archive.org/web/20200114132214/https://www.mfe.govt.nz/waste/circular-economy>



