Waste Assessment

Selwyn District Council

July 2017

Quality Assurance & Plan Status

1. Plan Version and Control		
Date	**Version Number**	**Checked by**
2011	Version 1.0	Dave Hock
2017	Version 2.0	Andrew Boyd
2018	Version 2.1	Andrew Boyd

2. Prepared By		
Date	**Name**	**Designation**
2017	Andrew Boyd	Solid Waste Manager
2017	Jess Court	Solid Waste Support Officer

3. Input From			
Date	**Name**	**Designation**	**Input**
2017	Murray Washington	Asset Manager	Review

4. Plan Update and Review	
Date	**Record Of:**
2017	Version 2.0: Updated for the review of the 2011 Waste Management and Minimisation Plan in accordance with the requirements under the Waste Minimisation Act 2008
2018	Version 2.1: Updated to reflect KPIs as stated in the 2018-28 Long Term Plan

Selwyn District Council
Waste Assessment

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Glossary

Cleanfill: a landfill that accepts only cleanfill material.[1]

Cleanfill material: material that, when buried, will have no adverse effect on people or the environment. Including virgin natural materials such as clay, soil and sock and other inert materials such as concrete or brick that are free of:
(a) combustible, putrescible, degradable or leachable components;
(b) hazardous substances;
(c) products or materials derived from hazardous waste treatment, hazardous waste stabilisation or hazardous waste disposal practices;
(d) materials that may present a risk to human or animal health such as medical and veterinary waste, asbestos or radioactive substances; and
(e) liquid waste.[1]

Disposal: means –
(a) the final (or more than short-term) deposit of waste into or onto land set apart for that purpose; or
(b) the incineration of waste.[2]

Disposal facility: means –
(a) a facility, including a landfill; -
  (i) at which waste is disposed of; and
  (ii) at which the waste disposed of includes household waste; and
  (iii) that operates, at least in part, as a business to dispose of waste; and
(b) any other facility or class of facility at which waste is disposed of that is described as a disposal facility.[2]

Diverted material: anything that is no longer required for its original purpose and, but for commercial or other waste minimisation activities, would be disposed of or discarded.[2]

Hazardous waste: waste that:
(a) contains hazardous substances at sufficient concentrations to exceed minimum degrees of hazard specified by Hazardous Substances (Minimum Degrees of Hazard) Regulations 2000 under the Hazardous Substances and New Organism Act 1996; or
(b) meets the definition for infectious substances included in the Land Transport Rule: Dangerous Goods on Land; or
(c) meets the definition for radioactive material included in the Radiation Protection Act 1965 and Regulations 1982.[3]

Household waste: waste generated as a result of the day-to-day running of a residential household.

Industrial / Commercial / Institutional waste: waste from industrial, commercial and institutional sources (i.e. supermarkets, shops, schools, hospitals, offices).[3]

Recovery: means –
(a) extraction of materials or energy from waste or diverted material for further use or processing; and
(b) includes making waste or diverted material into compost.[2]

Recycling: the reprocessing of waste or diverted material to produce new materials.[2]

[1] Ministry for the Environment, (2002) *A Guide for the Management of Cleanfills*
[2] Parliament of New Zealand, (2008) *Waste Minimisation Act No 89*
[3] WasteMINZ, (2015) *New Zealand Waste Data Framework Volume Two: Information about Waste Services and Facilities*

Reduction:	means – (a) lessening waste generation, including by using products more efficiently or by redesigning products; and (b) in relation to a product, lessening waste generation in relation to the product.[2]
Resource Recovery Park (RRP):	a facility established for the recovery of resources from the waste stream for subsequent use as raw materials for reuse, and for the consolidation of residual waste for transfer to landfill.[1]
Residual waste:	applied in a domestic sense means: household rubbish not able to be recycled, reused or composted.
Reuse:	means the further use of waste or diverted material in its existing form for the original purpose of the materials or products that constitute the waste or diverted material, or for a similar purpose.[2]
Reuse stores:	means: items that are salvaged or diverted from the waste stream undergo little or no modification and are sold at stores run by the community or territorial authorities.
SWAP:	Solid Waste Analysis Protocol. A study carried out to determine the composition of residual waste.
Treatment:	means – (a) subjecting waste to any physical, biological or chemical process to change its volume or character so that it may disposed of with no or reduced adverse effect on the environment; but (b) does not include the dilution of waste.[2]
Waste:	means – (a) anything disposed of or discarded; and (b) includes a type of waste that is defined by its composition or source (for example organic waste, electronic waste or construction and demolition waste); and (c) to avoid doubt, includes any component or element of diverted material, if the component or element is discarded.[2]
Waste Disposal Levy:	a levy introduced under the Waste Minimisation Act 2008 as a per tonne cost on all waste sent to landfill in order to: (a) raise revenue for promoting and achieving waste minimisation; and (b) increase the cost of waste disposal to recognise that disposal imposes costs on the environment, society, and the economy.[2]
Waste minimisation:	means – (a) the reduction of waste; and (b) the reuse, recycling and recovery of waste and diverted material.[2]

[1] Ministry for the Environment, (2002) *A Guide for the Management of Cleanfills*
[2] Parliament of New Zealand, (2008) *Waste Minimisation Act No 89*
[3] WasteMINZ, (2015) *New Zealand Waste Data Framework Volume Two: Information about Waste Services and Facilities*
[1] WasteMINZ, (2008) *The New Zealand Resource Recovery Park Design Guide*

Executive Summary

Under the Waste Management Act 2008 (WMA) each Territorial Authority (TA) is required to undertake a Waste Assessment and have regard to it in the review of its Waste Management and Minimisation Plan (WMMP).

This is the second Waste Assessment prepared for Selwyn District Council under the WMA. The first Waste Assessment was completed in 2011. Clear improvements have been made in the management and diversion of kerbside waste in the District over this period as a result of strong recycling and organic bin service uptake. At the same time, other streams such as commercial and construction waste have grown considerably. Unforeseen events such as the Christchurch Earthquake in February 2011 have resulted in significant changes within the District. These changes are mostly evident as a result of the population growth (predominantly migration from Christchurch). This growth in population has brought an associated increase in all waste streams in the District, and is projected to continue for the foreseeable future.

A number of traditional options exist to manage the waste associated with this growth, for example increasing bin numbers and expanding services. In addition to the traditional mechanisms to accommodate increased waste volumes, other methods (that are more aligned with the upper tiers of the Waste Hierarchy) exist to try to limit the growth of waste. In recent years, advances in technologies such as wood, plastic and tyre pyrolysis, as well as the success of reuse shops, waste education centres and micro enterprise type initiatives across the country have increased diversion of waste from landfill. A number of these options are considered worthwhile to explore for the future management of waste in Selwyn.

1 Introduction

The Selwyn District Council (the Council) is planning to review its current Waste Management and Minimisation Plan (WMMP) by 31 July 2017 in accordance with the requirements of the Waste Minimisation Act 2008 (WMA). Under the WMA each Territorial Authority (TA) is required to undertake a Waste Assessment prior to the review of its WMMP.

This document provides background information and data to support the Council's Waste Management and Minimisation planning process.

This Waste Assessment is intended to establish the planning foundations for the WMMP by:

- describing the current waste situation;
- identifying issues;
- a forecast of future demands;
- options available to meet forecast demands;
- assessment of the suitability of each option;
- the Councils proposed role in meeting those future demands; and
- the extent to which the proposals will protect public health, and promotion of effective and efficient waste management and minimisation in Selwyn District.

2 The Waste Situation

The 'waste situation' in the Selwyn District can be split into two main groups: Collection Services, and Disposal and Diversion Infrastructure. For consistency purposes, these groupings are utilised throughout this report.

Collection Services
Four main streams of materials form the bulk of waste collected within the District:

- Council Kerbside collection of residual waste from households and businesses.
- Council Kerbside collection of diverted material (recycling and organics) from households and businesses.
- Private provider collection of residual waste from households and businesses.
- Private provider collection of recycling from households and businesses.

Disposal and Diversion Infrastructure
Six main avenues exist for the disposal or diversion of waste materials from the District:

- Council's Pines Resource Recovery Park near Rolleston.
- Christchurch based transfer stations or recovery parks (a mixture of Christchurch City Council and private company transfer stations).
- Cleanfills (Council or privately owned)
- Recycling processing plants: EcoCentral Ltd in Christchurch for Council kerbside recyclables and private company Material Recovery Facilities (for commercial recycling collections such as cardboard from businesses).
- Organics processing – Council's plant at Pines Resource Recovery Park, other private compost operations.
- Alternative disposal such as farm waste pits or burning.

The following sections discuss the quantities, composition, sources and destinations of wastes associated with the broad categories of Collection Services, and Disposal and Diversion Infrastructure.

2.1 Waste Quantities

The Council provides the majority of collection services to households in the District, which enables it to collate reliable data about quantities for household waste and diverted material streams. Residual waste and organics data is obtained from measurements at the Pines Resource Recovery Park weighbridges. The quantities of recyclables from kerbside recycling collection are provided monthly to the Council by EcoCentral Ltd who are responsible for sorting and sale of the material. Cleanfill data is captured within our weighbridge software package. It is understood that the bulk of waste from businesses is disposed of at Pines RRP, however a reasonable proportion of business waste and recyclables is thought to be disposed of at facilities in Christchurch. The District's proximity to Christchurch means that some public waste will be disposed of there instead of at Pines RRP. This is discussed further in the Composition Section 2.2.

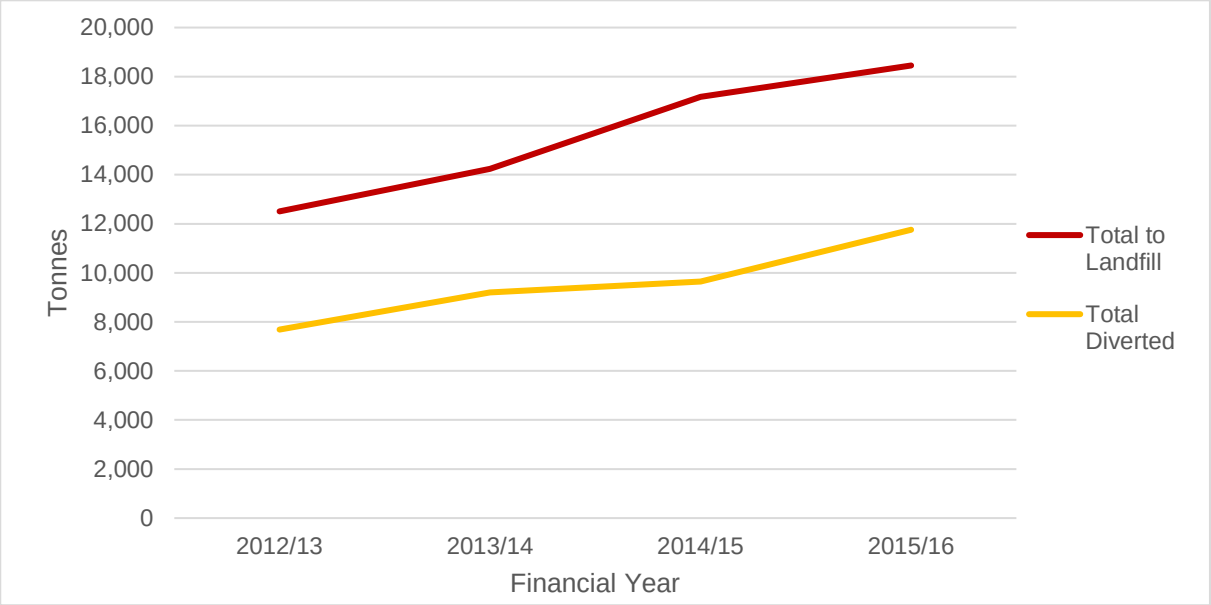
This report focuses on data associated with residual waste and diverted material streams that Council has current visibility over such as that collected by Council or received at Pines RRP.

Table 2-1 shows the total quantities of residual waste disposed to landfill and quantities of diverted material. As shown in the table, the Council has managed to increase the proportion of the total waste stream diverted from landfill from 24% in 2006/07 to 39% in 2015/16.

Table 2-1: Total Quantities of Residual Waste and Diverted Material

	2012/13	2013/14	2014/15	2015/16
Total to landfill	12,506	14,240	17,169	18,453
Total diverted material	7,677	9,174	9,602	11,720
% of waste stream diverted from Kate Valley Landfill	**38%**	**39%**	**36%**	**39%**

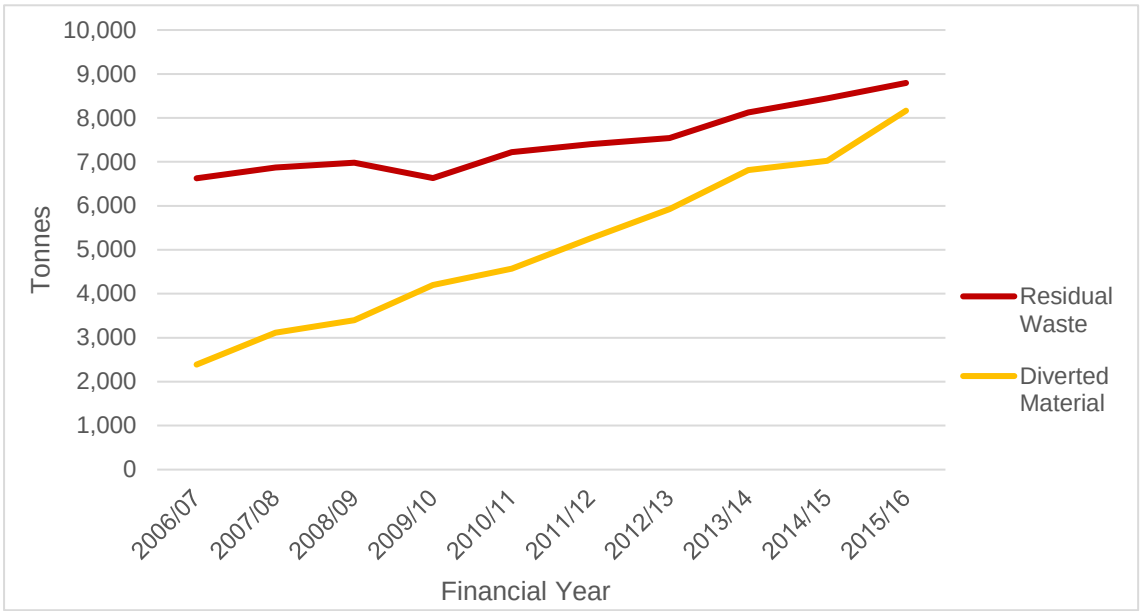
Figure 2-1: Total Quantities of Residual Waste and Diverted Material



2.1.1 Kerbside Quantities

Separating kerbside waste and diverted material quantities from total District waste quantities shows a clear improvement in diversion rates - from 26% in 2006/07 to 48% in 2015/16. This increase is mostly a result the roll out of 240 litre recycling wheelie bins to households, and a move away from crates, and the strong uptake of the organics bin service.

Figure 2-2: Kerbside Collection Quantities of Residual Waste and Diverted Material



Data Knowledge Gaps

Data for quantities of waste, recyclable and hazardous materials collected by private contractors is identified as an important gap in Council's current knowledge. This is something that is able to be addressed in future through the use of our Offensive Trade Licence requirements and is included as an issue to be addressed in Section 5. Data surrounding public waste and recycling taken out of the District for disposal would be much more difficult to ascertain. Estimations could be drawn by comparing volumes per capita in other areas of the District using Pines RRP and then relating that to population information for townships such as Prebbleton, where residents are more likely to use Christchurch City

Council's Parkhouse Road Transfer Station. Table 2-2 below gives a simple representation of our level of confidence in our data for each waste stream.

Table 2-2: Level of Confidence in the Capture of Quantity Data by Waste Stream

	High	Medium	Low
Kerbside residual waste	✓		
Kerbside recycling	✓		
Kerbside organics	✓		
Public residual waste taken to Pines RRP	✓		
Public residual waste taken out of District			✓
Public recycling taken to Pines RRP	✓		
Public recycling taken out of District			✓
Construction residual waste taken to Pines RRP	✓		
Construction residual waste taken out of District			✓
Commercial residual waste from private contractors taken to Pines RRP	✓		
Commercial residual waste from private contractors taken out of District			✓
Commercial recycling from Private contractors taken out of District			✓
Account holder residual waste taken to Pines RRP	✓		
Hazardous waste taken to Pines RRP	✓		
Hazardous waste taken out of District by private providers		✓	
Waste disposed of in farm pits or burnt			✓

2.1.2 Quantities Per Capita

The quantities of waste and diverted material have been expressed per capita for the purpose of forecasting future quantities and to compare with other districts. Residual waste quantities per capita form a performance measure in Council's LTP.

It is noted that population numbers for the District include Burnham Military Camp. Burnham Military Camp can accommodate over 1,000 staff (with significant future expansion plans), and waste quantities generated by Burnham Military Camp may be included in the District totals. Whether they are included is dependent upon the disposal facility used by the commercial contractor collecting Burnham's waste. Most loads are tipped at Pines RRP however some loads are tipped at facilities in Christchurch, dependent on collection vehicle routing and operational requirements. For now Council accepts this as an area of uncertainty with our data (refer Table 2-2).

Table 2-3 shows the annual waste and diverted material quantities per capita in Selwyn District. The 2015/16 annual average of residual waste to landfill was 343 kg per capita, in comparison to Ashburton District Council (366 kg/capita)[1], Waimakariri District Council (294 kg/capita)[2] and the Canterbury average (385 kg/capita)[3].

The waste quantities per capita are calculated as an average over the whole District for the purposes of the current LTP performance measure. A recommendation has been made to add an additional performance measure for 'kerbside waste per capita' only to the 2018-2028 LTP to provide an alternative measure of performance.

Table 2-3: Total Quantities per Capita

	2012/13	2013/14	2014/15	2015/16
Residual Waste	268 kg	288 kg	326 kg	343 kg
Diverted Material	164 kg	185 kg	182 kg	218 kg
Estimated Resident Population[4]	46,700	49,500	52,700	53,830

The significant increase in quantities per capita from 2013/14 to 2014/15 relates to the post-earthquake housing and commercial construction in the District. Construction waste began being recorded as a separate weighbridge category from March 2015. In the 2015/16 year 2,946 tonnes of construction waste was received at Pines RRP. Note that the kerbside waste per capita in Table 2-4 below shows a small decrease in the same period.

[1] Waste Not Consulting, (2015) *Ashburton District Council Waste Assessment*
[2] Morrison Low, (2017) *Waimakariri District Council Waste Assessment*
[3] Data Supplied by Territorial Local Authorities to Environment Canterbury (2014/15)
[4] Natalie Jackson Demographics, (2017) *Selwyn – Review of Demographics (Part A)*

Kerbside Breakdown

In Table 2-4 and Figure 2-3 below the kerbside residual waste volumes per capita have remained steady. This demonstrates that the increase in total waste per capita is skewed by commercial and construction waste, as opposed to an increase in the amount of household residual waste generated by residents. In addition the increase in diverted material between 2014/15 and 2015/16 is believed to be related to encouragement by Council customer service staff towards smaller residual waste bins and strong uptake of the organic bin option, as well as pricing disincentives for the larger residual waste bin.

Table 2-4: Kerbside Quantities per Capita

	2012/13	2013/14	2014/15	2015/16
Residual Waste	162 kg	164 kg	160 kg	163 kg
Diverted Material	127 kg	138 kg	133 kg	152 kg
Estimated Resident Population	46,700	49,500	52,700	53,830

Figure 2-3: Total Waste Vs Kerbside Waste Quantities per Capita

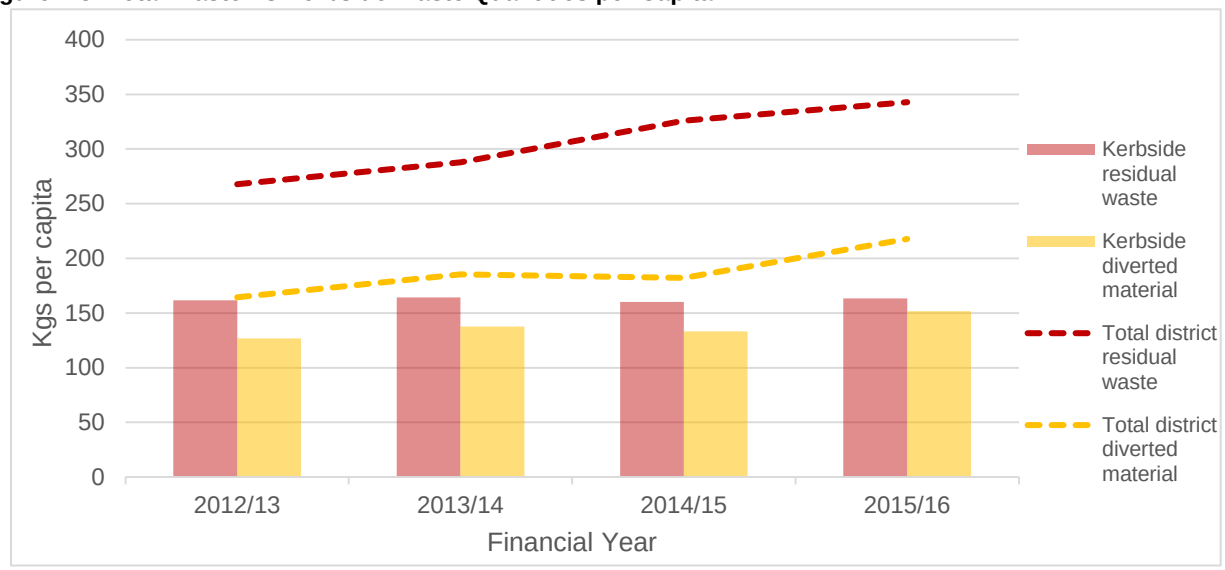
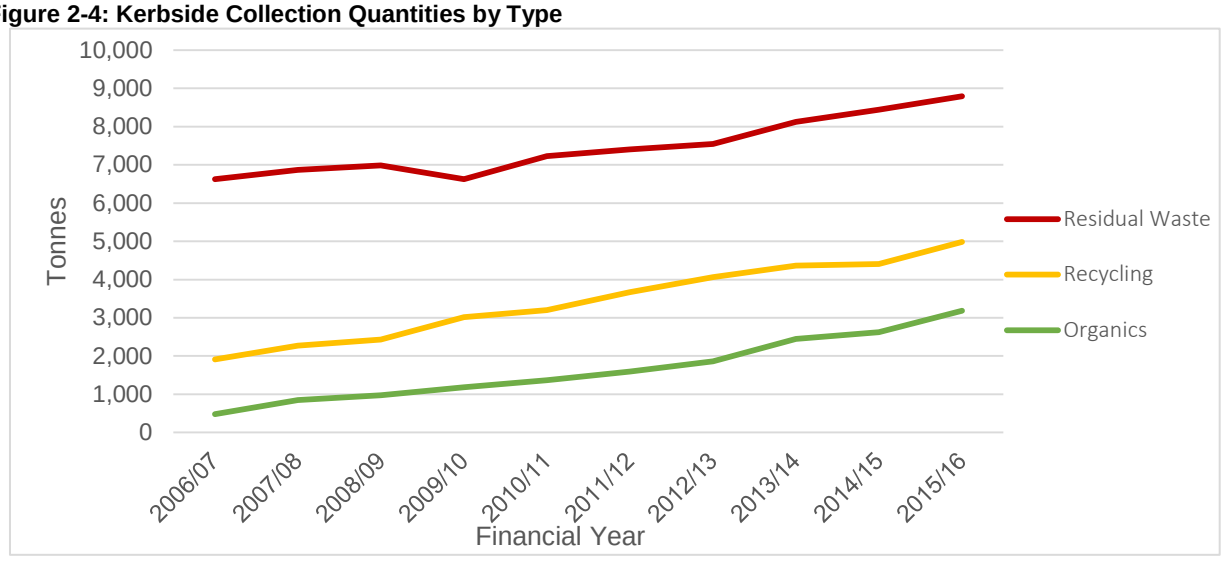


Figure 2-4 below shows the kerbside residual waste, recycling and organic tonnages split out from the aggregated numbers above.

Figure 2-4: Kerbside Collection Quantities by Type



2.2 Composition

Council has variable levels of information regarding the composition of waste streams. This is discussed in the following sections.

2.2.1 Collection Services

Residual Waste
Council has robust data for the composition of the kerbside residual waste stream as a result of a kerbside residual waste analysis in 2014 and an audit of food waste within the kerbside residual waste stream in 2015.

Council's kerbside residual waste SWAP analysis in 2014 provided the following composition breakdown.

Table 2-5: Composition of Kerbside Residual Waste in 2014[1]

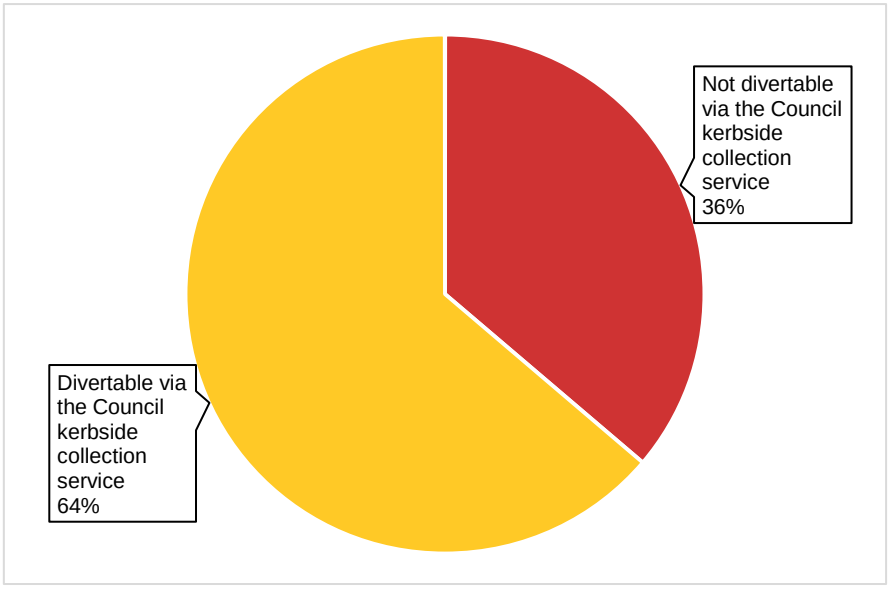
Type of waste		% of Total	Tonnes / annum
Paper	Recyclable (e.g. newspapers, magazines, cardboard boxes)	8.0%	613
	Non-recyclable (e.g. food contaminated, laminated paper)	1.1%	86
Plastic	# 1- 7	1.8%	136
	Non rigid plastic bags and film	4.0%	309
	Plastic shopping bags	1.3%	102
	All other non-recyclable items made primarily of plastic	3.1%	237
Organics	Kitchen waste	28.9%	2,214
	Green waste (e.g. lawn clippings, plants, tree branches)	19.6%	1,497
	Other (e.g. cat tray litter, hair)	4.0%	303
Ferrous metals	Steel cans	1.0%	73
	Other non-packaging items made primarily of ferrous metal	1.4%	108
Non-ferrous metals	Aluminium cans	0.3%	20
	Other (e.g. frying pans, pots, electrical wire)	0.7%	54
Glass	Bottles / jars (emptied, with lids removed)	3.0%	231
	Other (e.g. light bulbs, drinking glasses, window glass)	1.4%	105
Textiles	Items made primarily of fabric (e.g. clothes, curtains)	1.9%	142
	Other (e.g. shoes, backpacks, handbags, rugs)	2.0%	151
Sanitary paper	Disposable nappies, paper towels, tissues	7.8%	597
Cleanfill	Rubble, concrete, soil	6.4%	491
Timber	All items made primarily of timber	1.2%	91
Rubber	All items made primarily of rubber (e.g. kitchen gloves)	0.3%	24
Potentially hazardous	Household (e.g. batteries, aerosol cans, medicines, cosmetics, cleaning agents)	0.7%	50
	Other (e.g. used oil, garden chemicals)	0.3%	25
	Total	**100%**	**7,662**

It is clear that room for improvement still exists in the diversion of materials from kerbside residual waste, this is noted as an issue to be addressed in Section 5.

Figure 2-5 below shows that 64% of the materials within the residual waste stream are potentially recoverable / recyclable via the kerbside organics and kerbside recycling service. This equates to over 5,700 tonnes for the 2015/16 year and is predominantly organic waste such as food waste and garden waste.

[1] WasteNot Consulting, (2014) *Composition of Kerbside Refuse in Selwyn District*

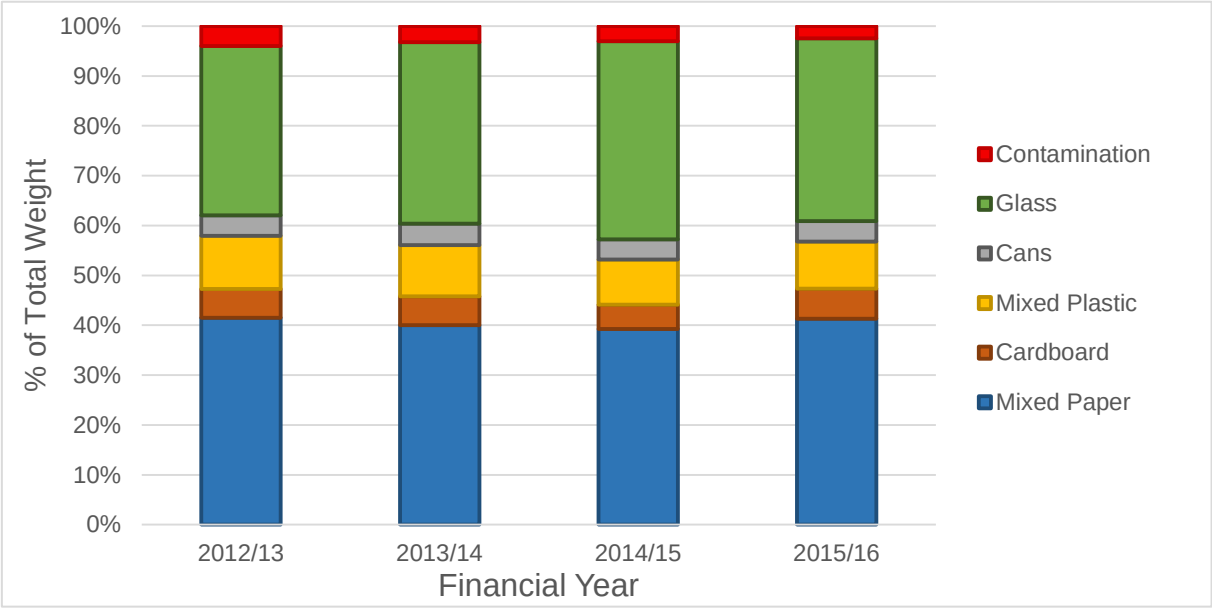
Figure 2-5: Percentage of Kerbside Residual Waste that is potentially divertible through the Kerbside Organics or Recycling Service



Recycling

The composition of material within Council's kerbside recycling collection has a fairly typical composition of any fully co-mingled kerbside recycling service in New Zealand. Figure 2-6 displays the breakdown of the contents by material type. The makeup of recyclables has remained relatively static over the past 5 years.

Figure 2-6: Composition of Selwyn's Kerbside Recycling



Organics

The composition of Council's kerbside organics collection is currently estimated (based on visual assessments) to be 97% garden waste and 2-3% food waste. This varies according to the time of year - e.g. more grass clippings in spring and summer.

2.2.2 Disposal and Diversion Infrastructure

Pines RRP receives the bulk of residual waste in the District. For the purposes of this Waste Assessment and the limited access to information from other disposal facilities outside of the District, this section will focus on those facilities within Council's control.

Four main streams of residual waste are received at Pines RRP: kerbside, commercial, construction and public (Figure 2-7). Three main streams of organic waste are received at Pines RRP: kerbside, commercial and public (Figure 2-8).

Figure 2-7: Residual Waste Weight (Tonnes) to Pines RRP by Source for FY 2015/16

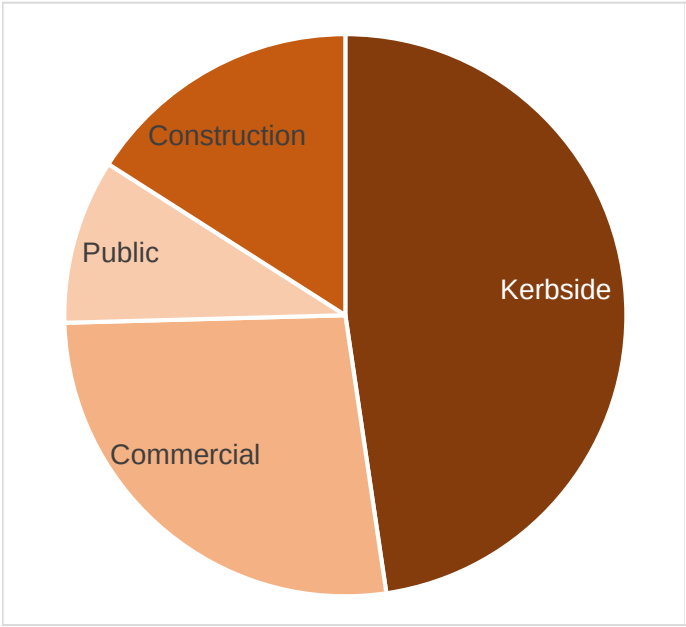
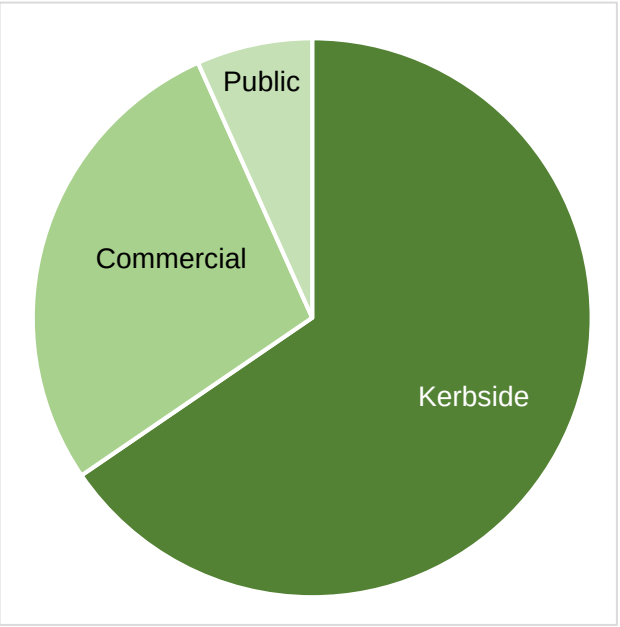


Figure 2-8: Organic Waste Weight (Tonnes) to Pines RRP by Source for FY 2015/16



Interestingly the 'composition' of the number of transactions at Pines RRP by waste stream (Figure 2-9 and Figure 2-10) shows a vastly different picture. It reflects the importance of the facility to the public, even if the tonnages involved are small.

Figure 2-9: Residual Waste Number of Transactions at Pines RRP by Source for FY 2015/16

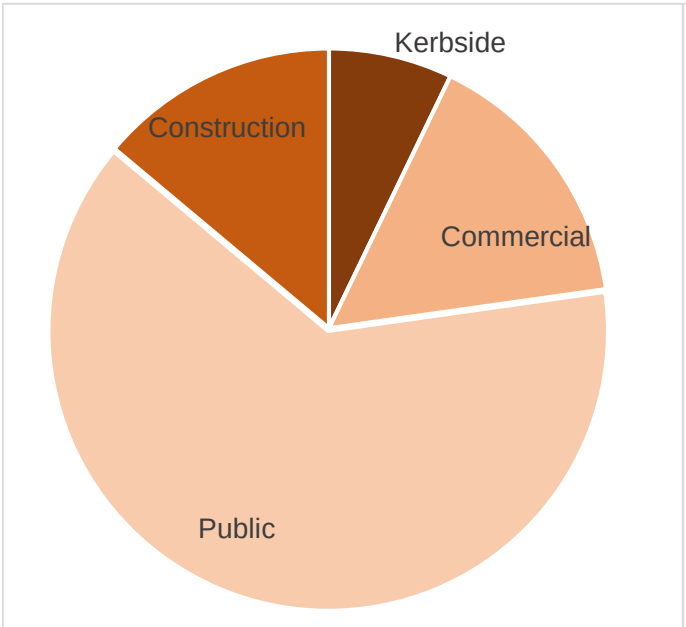
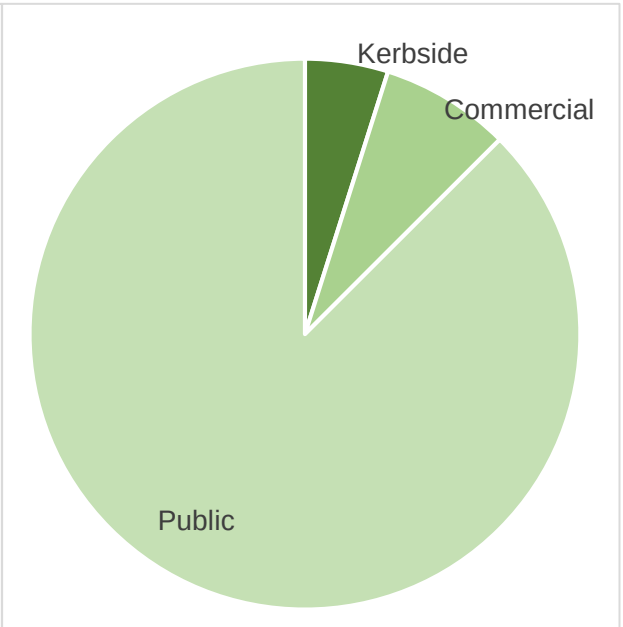


Figure 2-10: Organic Waste Number of Transactions at Pines RRP by Source for FY 2015/16

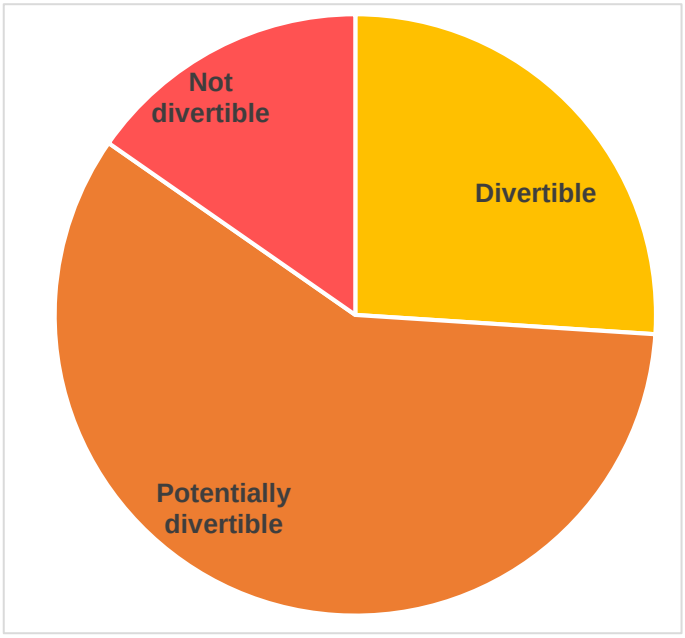


Kerbside residual waste and diverted material composition has been discussed in the previous section. Both the composition of commercial waste and public drop off waste have been identified as gaps in our knowledge and are noted as issues to be addressed in Sections 5.

Construction Waste

Separate category coding at the Pines RRP weighbridge enables tonnage data for construction waste to be recorded, however Council relies on local industry data for the average composition of construction waste skips. The composition of the construction waste stream is expected to be identical to that of typical household construction waste skips in Christchurch. A breakdown of this is shown below in Figure 2-11 and shows there are opportunities for sorting and diverting construction materials[1].

Figure 2-11: Potentially Divertible Materials on Residential Construction Sites



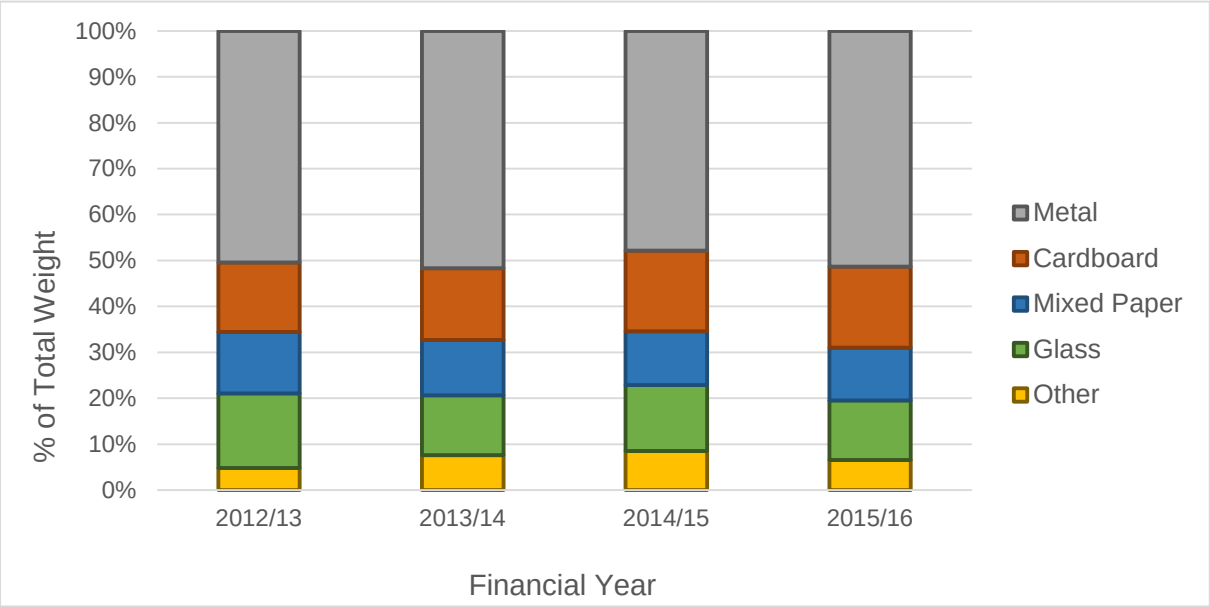
*Potentially divertible includes plasterboard, and treated and untreated timber. Divertible includes cardboard, plastics, metal, polystyrene, concrete, and bricks and tiles.

Public Drop-off Recyclables

Recyclables taken to the Pines RRP for recycling have a different composition to that of kerbside. This is primarily as a result of the cardboard and scrap metal received. The kerbside recycling service is limited in its ability to handle large volumes of cardboard and, with regards to metal, accepts only aluminium and steel cans. To recycle larger volumes of cardboard the public take this to Pines RRP. To recycle other scrap metal items the public take this to Pines RRP or make arrangements directly with private scrap metal providers.

[1] Averaged figures sourced from Target Sustainability, (2009) *House Builders Project* using REBRI volume-to-weight conversion for construction materials

Figure 2-12: Composition of Recycling From the Public Drop-off at Pines RRP



*Other includes mixed plastic 1-7, TVs, e-waste, tyres, LPG cylinders

Data Knowledge Gaps

Data for the composition of commercial waste, recyclable and hazardous materials that is collected by private contractors is identified as a gap in Council's current knowledge. This is something that is able to be addressed in future through the use of our Offensive Trade Licence requirements, and is listed as an issue to be addressed in Section 5. Data for public waste and recycling taken out of the District for disposal is expected to be very similar to that received at Pines RRP. Table 2-6 below gives a simple representation of our level of confidence in our knowledge of the composition of each waste stream.

Table 2-6: Confidence in Level of Knowledge of Waste Stream Composition

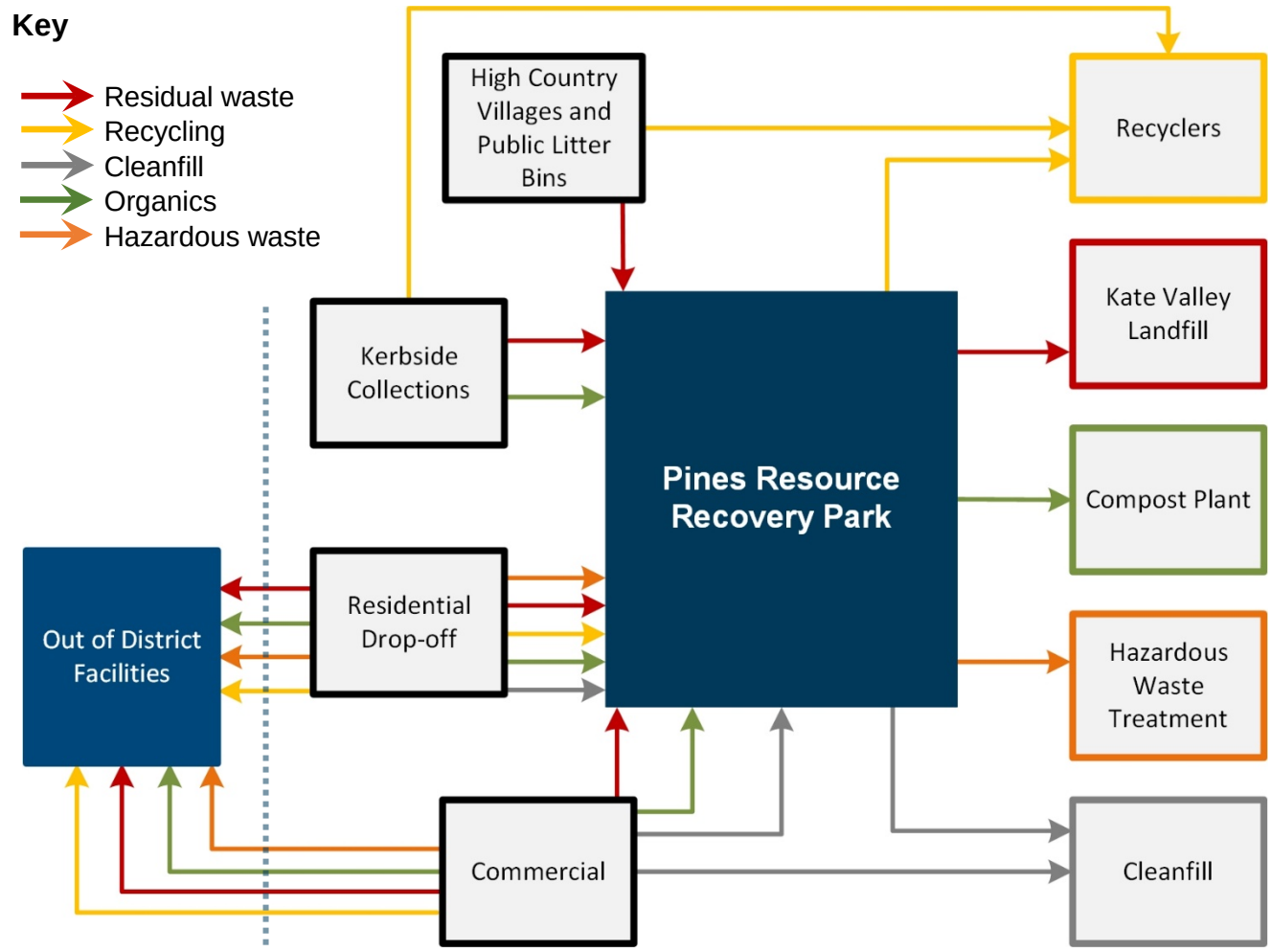
	High	Medium	Low
Kerbside residual waste	✓		
Kerbside recycling	✓		
Kerbside organics	✓		
Public residual waste taken to Pines RRP			✓
Public residual waste taken out of District			✓
Public recycling taken to Pines RRP	✓		
Public recycling taken out of District	✓		
Construction residual waste taken to Pines RRP		✓	
Construction residual waste taken out of District		✓	
Commercial residual waste from private contractors taken to Pines RRP			✓
Commercial residual waste from private contractors taken out of District			✓
Commercial recycling from private contractors taken out of District			✓
Account holder residual waste taken to Pines RRP			✓
Hazardous waste taken to Pines RRP	✓		
Hazardous waste taken out of District by private providers			✓
Waste disposed of in farm pits or burnt		✓*	

* Marked as medium knowledge of composition because we expect the composition to reflect recent NZ farm waste studies.

2.3 Sources and Destinations

A visual representation of the flows of various waste streams in the District is shown in Figure 2-13

Figure 2-13: Source and Destinations of Waste and Diverted Material



Detailed data about the number of tonnes by source is contained in Table 2-7 below. Of note is the growing proportion of commercial, construction and public residual waste. These waste streams have increased from 40% of the total residual waste to landfill, up to 52%. The bulk of this increase is construction waste.

Of note in the second part of the table (diverted material) is the 2,000 tonne (42%) growth in organics between 2012/13 and 2015/16. The other item of interest is cleanfill. Tightening of controls around access to the cleanfill pit has ensured that material is properly recorded and charged for.

Table 2-7: Source of Residual Waste and Diverted Material

Residual Waste Stream	Waste Disposed to Landfill (tonnes / year)			
	2012/13	2013/14	2014/15	2015/16
Kerbside residual waste collection (including public litter bins)	7,542	8,125	8,444	8,796
Commercial and public residual waste drop-off at Pines RRP	4,963	6,113	8,058	6,711
Construction related waste drop-off at Pines RRP (NB this was only measured separately from March 2014)	Incl. above	2	668	2,946
Total to landfill	**12,506**	**14,240**	**17,169**	**18,453**

Diverted Material Waste Stream	Waste Diverted (tonnes / year)			
	2012/13	2013/14	2014/15	2015/16
Kerbside recycling collection (including public litter bins)	4,065	4,366	4,403	4,982
Public recycling drop-off at Pines RRP (plastics 1-7, glass, paper, cardboard, scrap metal)	319	411	493	566
Kerbside organics collection	1,861	2,450	2,621	3,183
Commercial and public organic drop-off at Pines RRP (includes community garden waste days)	1,048	1,419	1,400	1,679
Commercial and public cleanfill drop-off (to Pines RRP and direct to Springston Pit)	370	480	631	1,246
Hazardous waste drop-off at Pines RRP (including paints and waste oil)*	4	23	16*	27
Other diverted waste material (LPG cylinders, tyres, appliances, TVs)	9	25	38	36
Total diverted material	**7,677**	**9,174**	**9,602**	**11,720**
% of waste stream diverted from Kate Valley Landfill	**38%**	**39%**	**36%**	**39%**

*Please note that previous weights provided for hazardous waste are reliant on historical reports from haz waste providers. All outgoing hazardous waste material only began being weighed at the Pines RRP from July 2016.

2.4 Existing Services and Infrastructure

The Council provides the majority of the waste and diverted material services and facilities in the District. This section outlines the waste services and infrastructure, private / commercial service providers, Council supported initiatives, as well as the residents' satisfaction ratings of the services and facilities. This section is structured in the following way:

- Collection Services
  - Kerbside Residual Waste, Recycling & Organics Collections
  - High Country Village Residual Waste & Recycling Collection
  - Public Litter Bin Residual Waste & Recycling Collection
- Disposal and Diversion Infrastructure
  - Residual Waste
  - Recyclable Materials
  - Organic Waste
  - Cleanfill
  - Hazardous waste
- Private / Commercial Providers
- Other Items and Council Supported Initiatives

2.4.1 Collection Services

Kerbside Residual Waste, Recycling & Organics Collections
The Council currently provides a kerbside collection service under Contract No. 1144 to Waste Management NZ Ltd (formally Transpacific Industries Group NZ Ltd). The contract completion date is June 2024.

Residents have access to a flexible service with a number of options and can select the combination of bins or bags that best suit their household and property. Approximately 92% of the District has direct access to a kerbside service outside their property. The remainder take the bins, bags or crates to the nearest kerbside drop off collection point, to Pines RRP, or in some cases, dispose of waste into farm pits or burn it.

Requests to extend the kerbside service into rural areas outside of the current collection routes are considered on a case by case basis following the consideration of number of households per kilometre, distance from the current route, demand and the viability of the proposed route extension in terms of safe and suitable access and turning for large refuse tucks.

Kerbside residual waste is collected weekly and is transported by the collection contractor to the Pines RRP (refer Section 2.4.2) for compaction, transfer and disposal at Kate Valley Regional Landfill.

Kerbside recycling is collected fortnightly and is taken by the collection contractor directly to EcoCentral Ltd in Christchurch for sorting, processing and sale.

Kerbside organic waste is collected weekly and is transported by the collection contractor to the Pines RRP (refer Section 2.4.2) where it is composted.

Ownership of the bins in service currently lies with the contractor. This is noted as an option to be addressed in Section 5 to investigate whether this is the most appropriate ownership structure, or whether it unfairly disadvantages other contractors during the future tendering of services.

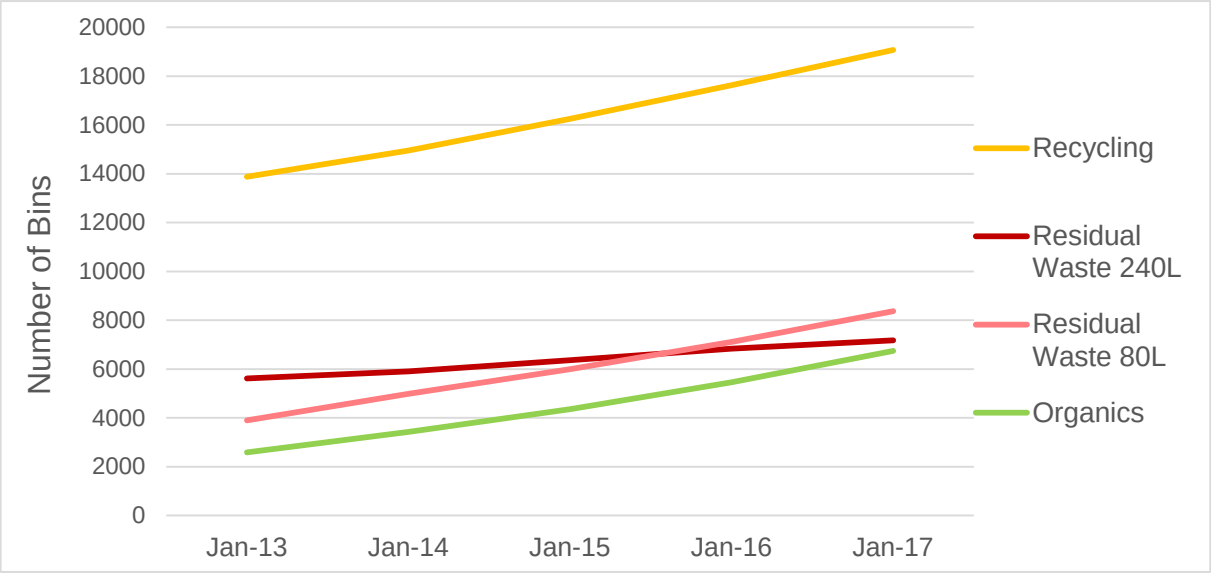
Table 2-8: Description and Rateable Charges for Kerbside Collection Options at July 2017

Refuse Uniform Charge	Uniform annual charge	$24.50 p/a	Compulsory charge for households on collection route.
Recycling	240 litre yellow lid wheelie bin	$63.00 p/a	Compulsory charge for households on collection route.
Recycling	2x 60 litre black crates	$63.00 p/a	Optional service – off route collection only. No uniform annual charge.
Organics	240 litre lime green lid wheelie bin	$210.00 p/a	Optional service – on collection route only.
Residual Waste	80 litre red lid wheelie bin	$121.00 p/a	Optional service – on collection route only.
Residual Waste	240 litre red lid wheelie bin	$395.00 p/a	Optional service – on collection route only.
Residual Waste	60 litre official Council bags	RRP $2.00 per bag	Optional service – on and off collection route available. Bags are sold in packs of 5 and can be purchased from Council Service Centres and selected supermarkets.

At June 2017 there are approximately 43,000 bins in place throughout the District. This is made up of 16,000 residual waste bins, 7,000 organics bins and 20,000 recycling bins / crates.

The bin numbers shown in Figure 2-14 reflect the significant population growth that the district has experienced and continues to experience.

Figure 2-14: Kerbside Bin Numbers

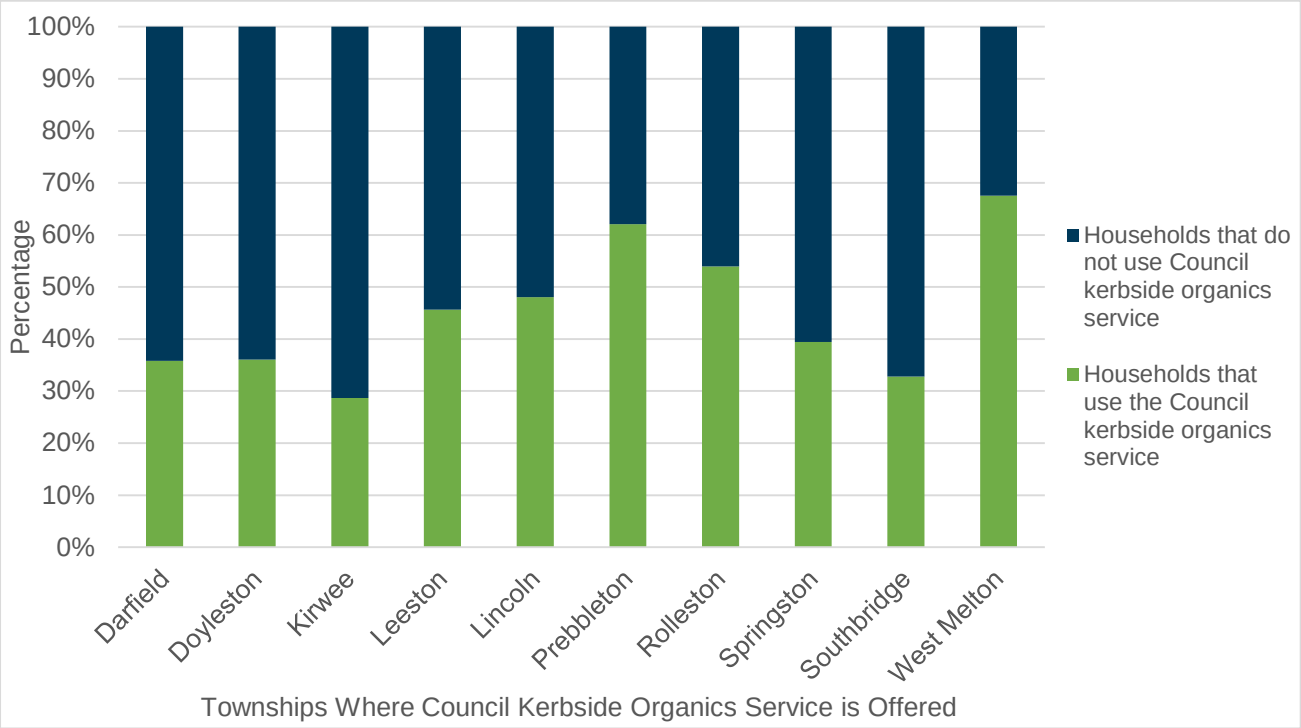


Strong growth is evident in recycling, organic and the 80 litre residual waste bin options. This demonstrates that the pricing incentives / disincentives that are in place for the services is producing the desired result: a reduction in the large 240 litre residual waste bins.

Kerbside organic collection is currently available in the townships of Darfield, Kirwee, Leeston, Doyleston, Lincoln, Prebbleton, Rolleston, Springston, Southbridge and West Melton. This allows approximately 65% of the households in the District to access the organic service. There is capacity for additional properties within already serviced townships to utilise the kerbside organics collection service. Figure 2-15 shows the uptake of the kerbside organics service in the townships where it is offered.

In total, in the townships where the kerbside organics service is offered, 7,000 households utilise the service, however over 6,000 households have access to the service but do not currently choose to use it (noted as an issue to be addressed in Section 5).

Figure 2-15: Proportion of Households Using the Council Kerbside Organics Service



High Country Village Residual Waste & Recycling Collection

Approximately 280 household properties exist in High Country Villages such as Arthur's Pass, Castle Hill and Lake Coleridge.

Each separately used or inhabited portion of a property in these areas pays a compulsory targeted rate for the residual waste and recycling disposal service. In addition, some income is generated from commercial customers on the Arthur's Pass collection.

Residents, holiday home users and visitors to Arthur's Pass and Castle Hill take their residual waste to large (4.5 m^3) frontload bins with lids located within the townships. These bins are emptied fortnightly by a front loading compactor truck.

Lake Coleridge residents and visitors take their refuse to a community refuse trailer with a covered bin. This is emptied on a fortnightly basis.

Residual waste from these collections is transported to Pines Resource Recovery Park and the weight data is reported under the Kerbside Collection weighbridge category.

A recycling station has been installed in Arthur's Pass and a temporary recycling station exists at Castle Hill. These are emptied on an as needs basis. A second recycling station in Arthur's Pass is planned for installation in late 2017, as well as a permanent one for Castle Hill. Recycling from the stations is taken to EcoCentral Ltd in Christchurch for processing. Recycling wheelie bins are located at the community refuse trailer area at Lake Coleridge. These are taken by the contractor into Pines RRP for recycling.

Fly Tipping and Public Litter Bins

The management of fly tipping is currently managed by the Council's Roading Department. Collection of fly tipped material is undertaken by the roading contractor.

The provision and management of public litter bins falls between the Council's Solid Waste, and Parks and Reserves Departments. Parks and Reserves manages the majority of public litter bins, with the Solid Waste Department providing approximately 45 large 240 litre residual waste litter bins, and 16 large 240 litre recycling bins, mostly housed within steel enclosures to the high street areas of townships. These are emptied under the Kerbside Collections Contract no. 1144. Smaller capacity litter bins at parks and reserves are emptied by the reserves maintenance contractor Sicon Ltd. The litter bin service is funded from the Council's general rate via township budgets.

2.4.2 Disposal and Diversion Infrastructure

The Pines Resource Recovery Park is the Council's only permanent waste handling facility. It is located on Burnham School Road closest to the District's most populous township – Rolleston. This facility receives residual waste, organic material, cleanfill, household volumes of hazardous waste and most recyclable materials.

The Pines RRP site has a land designation for resource recovery activities as well as discharge consents for activities on site. The facility consists of a waste receiving area and related structure, a waste compactor, composting area, a weighbridge kiosk with two weighbridges, an area for accepting public recycling materials, an office / meeting room for the on-site Contract Supervisor, shipping containers (for the storage of E-Waste, hazardous and flammable wastes, and agricultural chemical containers) as well as various storage areas.

Pines RRP is operated by Sicon Ltd under Contract no. 1245, with this contract managed by the Council's Solid Waste Manager. Sicon Ltd is owned by Selwyn Investment Holdings Ltd, a Council controlled organisation.

The District's residual waste is compacted into large hookload containers at Pines RRP and dispatched for disposal at the Kate Valley Regional Landfill. Detail around the quantities, sources and composition of waste received is in Section 2 of this Waste Assessment.

Household recyclable materials are stored and transported to EcoCentral Ltd for processing. Other recyclables for example scrap metal, polystyrene and oil are collected by commercial service providers and taken for processing and recycling.

Figure 2-16 below shows an aerial view of the Pines RRP site and the range of waste and recyclable materials accepted at the facility.

Figure 2-16: Types of Materials Accepted at Pines RRP

Funding

Pines RRP is operated on a user pays basis and is open 7 days per week. Charges (Table 2-9) for disposal of residual waste, organic waste and cleanfill are set to cover operating and life cycle costs.

Kate Valley Landfill disposal costs will continue to increase as a result of capital and operational cost increases, price index adjustments, fuel price increases. As such, adjustments are made to targeted rates and user charges from time to time in order to achieve a cost-neutral position.

Table 2-9: Charges at the Pines Resource Recovery Park as at July 2017

Material	Charge GST Inclusive
Minimum waste or organic fee	$5.00
Residual waste	$224.00 per tonne
Garden and food waste (organic)	$107.00 per tonne
Cleanfill	$52.00 per tonne
TVs	$4.50 - $10.00 per item (range depending on type)
Tyres	$3.00 - $51.00 per item (range depending on type)
Child car seat recycling	$5.00 per item
Recycling (glass, plastic containers, metals, tins, paper, cardboard)	No charge
Hazardous waste	No charge

Satellite RRP Service

In addition to the Pines RRP facility, Council also provide periodic community garden and scrap metal drop off days at locations in Ellesmere and Malvern. These are provided with the purpose of improving accessibility and proximity to properties located at a more considerable distance from the Pines RRP. Plans and consents are in place to broaden the scope of materials accepted at these events, and to effectively have 'pop-up' temporary Resource Recovery Parks in future.

Figure 2-17: Photos from a Community Garden Waste Day

Old Closed Landfills

The District contains a number of old landfills that were in operation prior to the opening of the Kate Valley Regional Landfill in 2005. The known closed landfills include Arthur's Pass, Springfield (Cox's pit), Hawkins Pit (Darfield), Hororata, Killinchy, and Springston / Luggs Pit. Groundwater monitoring occurs at several of these in accordance with closed landfill management plans. Numerous other old historic closed town landfills are also present across the District but the knowledge of where they are located is somewhat limited. From time to time these are identified during development of subdivisions or building activity that disturbs the soil surface.

This has been noted as an issue in Section 5 to further our understanding of the status of the currently known closed landfills, as well as to better understand where older historic 'town dumps' may have been located. Gaining a better understanding of these and any liability, environmental contamination, or clean-up costs that could potentially be present is an important area requiring further investigation

2.4.3 Private / Commercial Providers (Non-Council provided services)

Collection Services
A significant proportion of waste and recyclable material in the District is collected by private commercial companies, a summary of these companies is outlined in Table 2-10.

Table 2-10: Main Private Collection Services Providers in the District

Company name	Size of Company	Services Provided within the District
EnviroWaste Services Ltd	Very Large	Commercial wheelie bins, frontload bins and skips (construction waste) Residential skips Commercial recycling collection Hazardous waste collection
Waste Management NZ Ltd	Very Large	Commercial wheelie bins, frontload bins, skips (construction waste) and hookload bins Residential skips Commercial recycling collection Hazardous waste collection
Container Waste Ltd	Medium	Commercial and residential skips, hookload bins
Quick Skips	Medium	Commercial and residential skips
Malvern Waste Solutions	Small	Commercial and residential skips, drums and wheelie bins
Ellesmere Bins	Small	Commercial and residential drums and wheelie bins
Oji Fibre Solutions (formally Fullcircle)	Large	Commercial cardboard and paper recycling collections
Reclaim	Large	Commercial cardboard and paper recycling collections
Scrap metal (numerous providers)	Variable	Scrap metal collections

Two local providers Ellesmere Bins and Malvern Waste Solutions provide household refuse drum and wheelie bin services to some of the households not on kerbside collection routes.

Waste weight data is collected from private sector waste and recycling management service providers that use the Pines RRP for waste disposal. Council's knowledge of data of waste or recyclables that are collected from within the District but taken to Christchurch for processing or disposal is limited and is noted as an issue to be addressed in Section 5.

Disposal and Diversion Infrastructure
The bulk of waste is received at Council's Pines RRP facility or is taken directly into Christchurch for processing or disposal.

Three privately run composting operations exist in the District. Canterbury Greenwaste Processors Ltd in Greenpark, Frews Ltd in Hororata, and Southern Horticultural Products Ltd (Intelligro) in Weedons. In addition there are several privately run cleanfills and one managed fill in the District (Frews Ltd, Hororata).

2.4.4 Other items and Council Supported Initiatives

The Council continues to support a number of initiatives aimed at waste minimisation (waste reduction and diversion). These include education related initiatives as well as support for other initiatives such as product stewardship. Council partners with these organisations and supports these initiatives as an important method of fulfilling key components of its responsibilities under the WMA 2008 and the NZWS 2010. Waste levy funding returned to the Council from MfE is often used to fund these waste minimisation related activities.

2.4.4.1 Education

Waste related education is tackled in three broad groups: Schools and preschools, Businesses and the Public. Council partners with a number of organisations to achieve results in these areas:

- **Schools and preschools:**
  - Enviroschools – Council contributes funding (via the Solid Waste Budget) towards the Enviroschools program in the District. Other partners include Department of Conservation, Environment Canterbury, and the Toimata Foundation (funded by Ministry for the Environment). Enviroschools takes a holistic approach to teaching and connecting students with their environment. They employ a "train the trainer" type approach whereby the Enviroschool Facilitator runs cluster meetings training teachers from participating schools to deliver sessions to students. In addition, the Enviroschools Facilitator runs sessions directly with students.
  - Wastebusters Canterbury Trust are engaged to provide the school education programme. This takes the form of direct classroom sessions with students focussed on waste reduction, recycling and waste related issues. These practical sessions complement the more holistic Enviroschools approach.
  - Schools are directly assisted by Council with equipment for waste minimisation, such as internal recycling bins.
  - Solid Waste staff talk to students at schools within the District from time to time regarding waste related issues.

- **Businesses:**
  - Lincoln Envirotown are funded by Council's waste budget to assess the sustainability of businesses in the District. This is achieved through the Responsible Business Awards – a voluntary Environmental Assessment and rating process for businesses in the District.

- **Public:**
  - Council regularly communicates waste related messages to residents through a number of local newspapers, flyers, direct mail (addressing recycling or organics bin contamination), social media platforms such as Facebook and Neighbourly, and by SMS.
  - Council Solid Waste staff talk at community group meetings from time to time. For example, Time4Mums Rolleston, Rolleston Business Awards (Envirotown), Enviroschool cluster meetings.
  - Waste Free Parenting Workshops are held twice per annum in Rolleston and Lincoln.
  - Food Lovers Masterclass are held twice per annum in Rolleston and Lincoln. This class focuses on minimising food waste in the home.
  - Funding and equipment for waste minimisation is made available to organisers of events

Figure 2-18: Kate Meads "The Nappy Lady" presenting a Waste Free Parenting Workshop

2.4.4.2 Other initiatives

- Child car seat recycling joint promotion with Council's Road Safety team, with a 50% fee subsidy by Council.
- 50% subsidy for TV recycling drop off at Pines RRP, and fully subsidised E-waste drop off.
- Haz waste / DDT collections in the District. With support from both Environment Canterbury and Council.
- AgRecovery: This is a product stewardship scheme for the collection of farm plastics, such as agrichemical containers. A container is provided at the Pines RRP for this purpose and is managed by the RRP Contractor.
- Regional waste minimisation initiatives: The Canterbury Waste Joint Committee operates a fund for local region waste minimisation projects. This fund is contributed to by Selwyn District Council and other territorial authorities in the region.
- Local joint Council staff initiatives including the development of an environmental e-book and Love Food Hate Waste regional resources
- Support and promote initiatives such as Keep New Zealand Beautiful Clean-up Week.

2.5 Customer Satisfaction

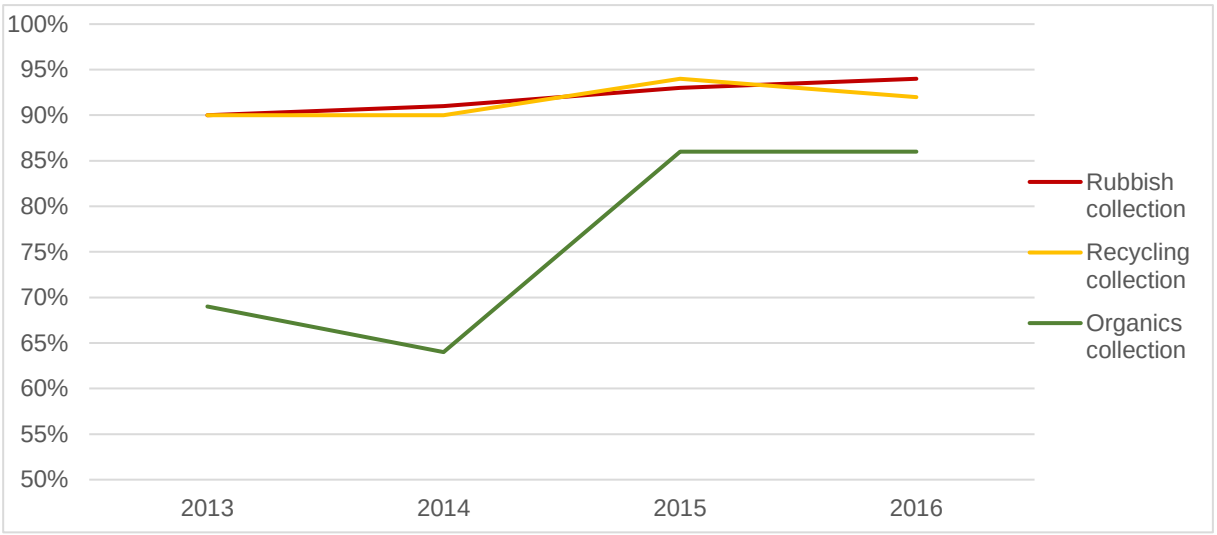
The main mechanisms by which the Council monitors customer satisfaction are the following:

- public complaints through the service request system;
- public enquiries;
- feedback directly from elected members, community boards, township committees, and the public in general;
- regular contact and reporting from the contractors;
- results from the Annual Residents' Survey; and
- submissions received on the Long Term Plan or WMMP.

Collection Services

Figure 2-19 shows the kerbside collection performance rating from resident surveys. Waste services are very highly rated by the community. In particular, rubbish collection and recycling had the two highest ratings of any of the council services and activities. The sharp increase in satisfaction of the organic service between 2014 and 2015 is attributable in part to a change in the way the survey targeted this question (i.e. from 2015 it only asked those who had the organic service how they rated it, rather than also asking those who did not have the service to comment on it).

Figure 2-19: Resident Satisfaction Rating by Collection Service



The 2016 Resident Satisfaction Survey showed 91% user satisfaction with the kerbside collection service overall in Selwyn in comparison to Ashburton District Council with 77% user satisfaction (2017), Waimakariri District Council with 85% user satisfaction (2016) and Christchurch City Council with 91% user satisfaction (2017).

Disposal and Diversion Infrastructure

Resident use and satisfaction of the Pines RRP facility is also surveyed annually. Trends and results for these are shown in Figure 2-20 and Figure 2-21, respectively.

Figure 2-20: Proportion of Residents Using the Resource Recovery Park

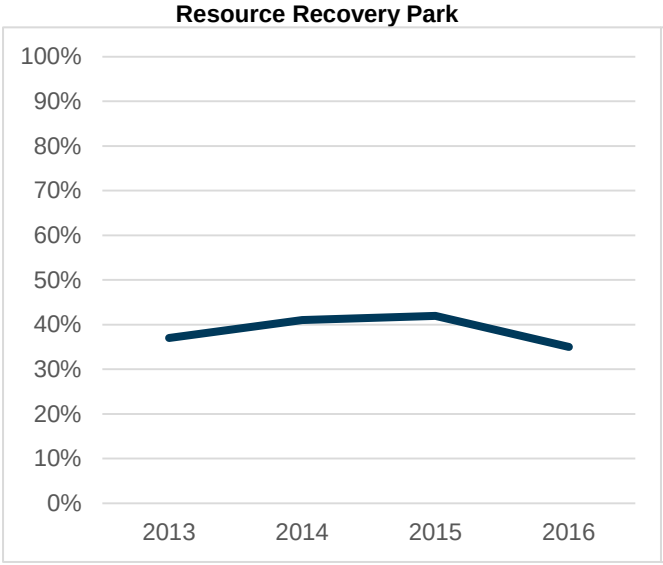
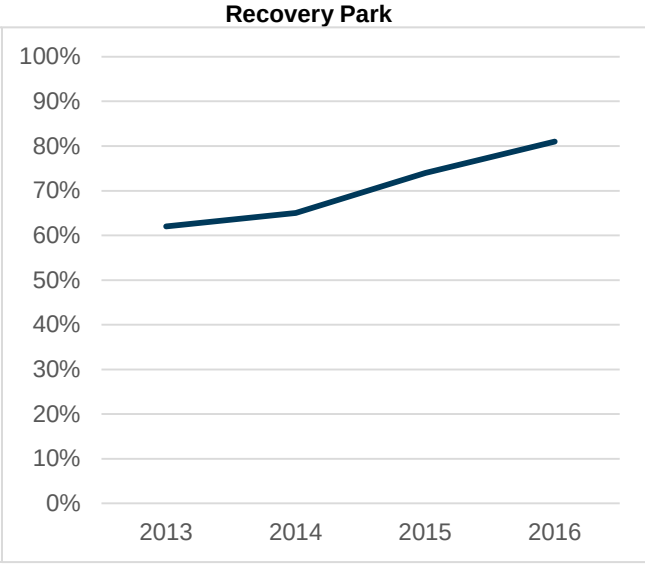


Figure 2-21: User Satisfaction with the Resource Recovery Park



The proportion of residents using the RRP decreased in 2016. This decrease in percentage is thought to be associated with:

- The growth in the District being accommodated in newly constructed housing. Newer housing tends to have smaller sections with less established gardens and less time for junk to accumulate.
- Residents moving to new housing mostly arrive from outside the District and tend to have disposed of bulky refuse prior to moving.
- Growth has also predominantly been in urban areas that are well catered for with kerbside bin collections.
- It is also apparent that a lack of awareness of the Pines RRP facility exists (this is noted as an issue to be addressed in Section 5).
- Much of the growth in the District has been on the fringes of Christchurch. Residents in some locations may find the Christchurch City Council Facility in Parkhouse Road, Wigram more conveniently located.

The 2016 Resident Satisfaction Survey showed 81% user satisfaction with the Pines RRP in comparison to Ashburton District Council with 95% user satisfaction with the provision of RRPs and recycling drop-off facilities (2014). The higher satisfaction rating for Ashburton it is believed to primarily come as a result of the ability to drop off reusable items free of charge, and the provision of a reuse shop.

3 Future Growth and Forecast of Demand

A waste assessment must contain a forecast of future demands for collection, recycling, recovery, treatment and disposal services within the District whether by the Council or otherwise.

In the context of the Waste Assessment, a demand means a current or potential future need for a waste or diverted material service in the District. This section contains a forecast of future demands covering 20 years for waste and diverted material services, infrastructure and programmes. For this reason we have included 'future growth' within this section – growth directly affects demand.

Key factors influencing demand for solid waste services are:

- population growth, spread and household numbers;
- level of service expectations;
- industrial and commercial growth;
- decisions by private waste collectors;
- GDP;
- changes in consumption habits; and
- changes in waste management approaches.

3.1 Key Factors Influencing Demand for Services

3.1.1 Population Growth, Spread and Household Numbers

According to the provisional estimates of Statistics New Zealand for the period 1996-2016, Selwyn District was New Zealand's second-fastest growing district, after the Queenstown-Lakes District. The 2013 Census showed a 32.6% increase in population since the 2006 Census.

Across the projected period 2016-2043 Selwyn has the greatest projected growth of any TA. Selwyn's current average of 2.8 people per household will fall to 2.7 in 2027, and a further drop to 2.6 in 2038. While this appears to be a small reduction, when extrapolated over the district results in a significant increase in the number of houses for the total population. For example, this .01 to .02 change has an overall impact of 3,000 additional households by 2043. The increase in the number of houses required directly affects the number of kerbside bins required, as well as flow on effects to collection vehicle numbers.

Inter-census periods 2001-2006 and 2008-2013 both show 71% of migration into Selwyn District was from Christchurch City. Migration from an urban environment to a fringe urban-rural environment can sometimes be reflected in expectations around Level of Service (Section 3.1.3)

Table 3-1: Township Population Growth Projection 2018-2046[1]

	2018	2022	2026	2030	2034	2038	2042	2046
Rolleston	17,348	23,652	25,543	27,383	29,207	31,013	32,769	34,525
Lincoln	6,946	9,806	11,140	12,437	13,722	14,995	16,231	17,466
Prebbleton	3,918	4,286	4,655	5,013	5,368	5,719	6,060	6,401
West Melton	1,778	1,870	1,962	2,052	2,140	2,228	2,314	2,399
Tai Tapu	513	525	536	547	558	569	580	591
Springston	513	525	536	547	558	569	580	591
Darfield	2,828	3,132	3,436	3,731	4,022	4,311	4,590	4,870
Leeston	2,453	2,762	3,070	3,369	3,665	3,959	4,243	4,528
Castle Hill	335	403	471	536	601	666	728	791
Coalgate / Glentunnel / Whitecliffs	1,144	1,218	1,292	1,364	1,435	1,505	1,573	1,642
Doyleston	307	378	450	520	589	657	723	789
Dunsandel	480	498	515	533	550	567	583	600
Hororata	556	576	596	615	634	653	672	690
Kirwee	980	1,129	1,278	1,423	1,566	1,708	1,846	1,984
Lake Coleridge	164	174	184	194	203	213	222	231
Rakaia Huts	316	326	335	345	355	364	373	382
Sheffield/Waddington	442	462	482	501	520	539	557	576
Southbridge	963	1,000	1,038	1,075	1,111	1,147	1,182	1,217
Springfield	479	505	531	556	581	606	630	654
Rural*	15,653	16,668	17,684	18,672	19,650	20,619	21,559	22,500
Selwyn Total Population	**58,117**	**69,894**	**75,734**	**81,413**	**87,037**	**92,608**	**98,018**	**103,428**

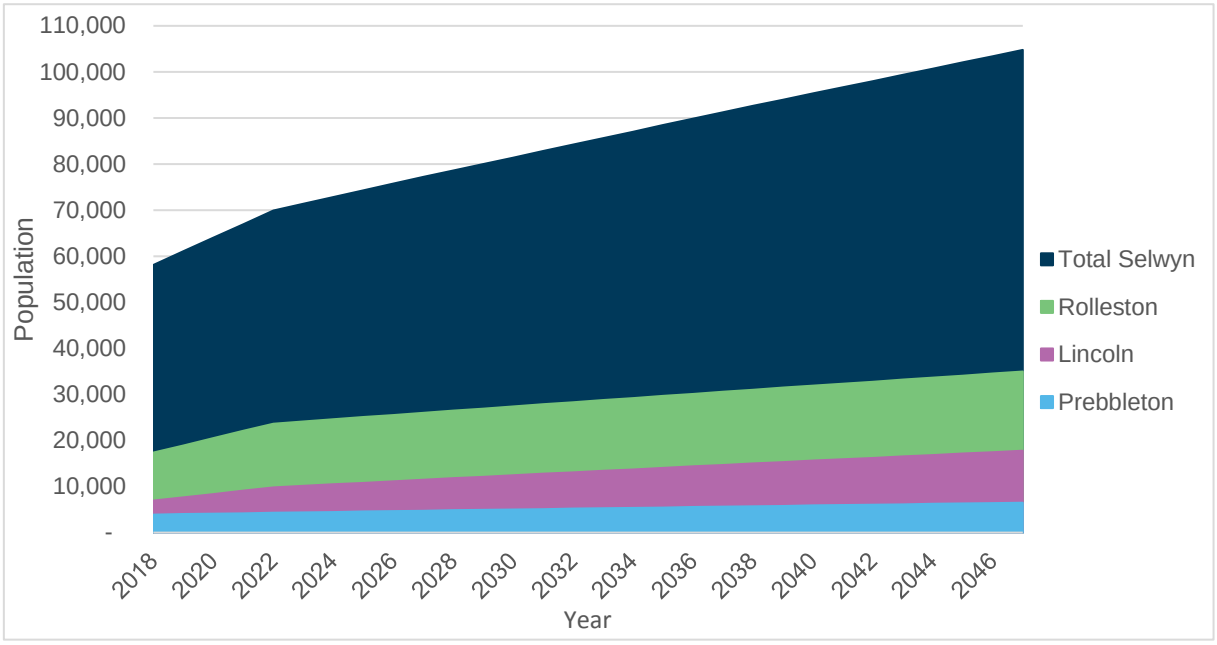
*Including Burnham Military Camp

Rolleston is projected to have a population of over 30,000 by 2036. Expectations are that it will continue to have a younger than average demographic. Currently 30% of the District's total population live in Rolleston. This is expected to climb to 33% by 2043.

Lincoln's population is projected to double to 14,000 by 2035. The development of the University and research centres could potentially result in a more rapid growth.

Prebbleton is also expected to grow, with a projected population of over 6,000 by 2042, however limitations on infrastructure and development boundaries may mean this growth is more constrained.

Figure 3-1: Population Growth Projections Showing Townships with Greatest Projected Growth 2018-2046



[1] Natalie Jackson Demographics Ltd, (2017) *Selwyn Growth Model*

Figure 3-2 shows the relative size and rate of growth for the townships in the District, the township "spread" is not spatially representative.[1]

Figure 3-2: Population Growth Projections for the Periods: 2018 – 2021 and 2021 – 2028

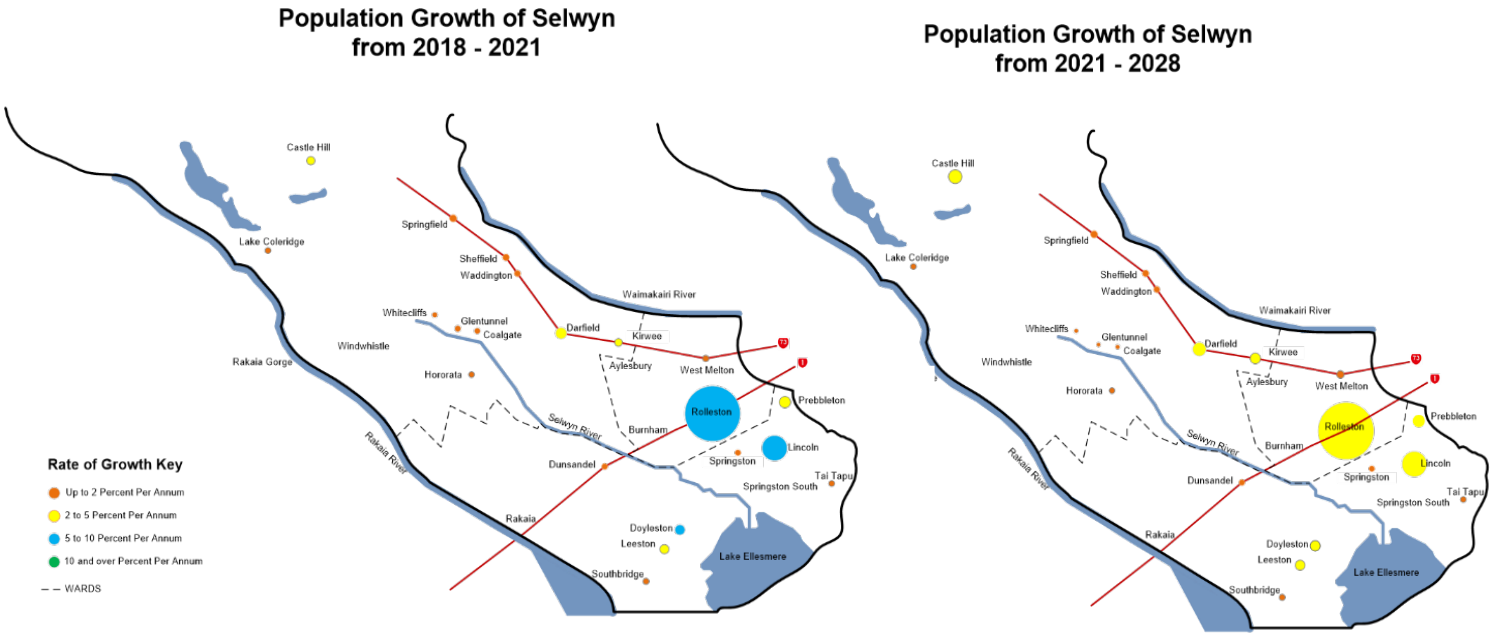


Table 3-2: Township Household Number Growth Projection 2018-2046[2]

	2018	2022	2026	2030	2034	2038	2042	2046
Rolleston	6,196	8,447	9,260	10,073	10,875	11,667	12,458	13,250
Lincoln	2,573	3,632	4,191	4,751	5,308	5,863	6,417	6,972
Prebbleton	1,451	1,588	1,751	1,915	2,076	2,236	2,395	2,555
West Melton	659	693	738	783	828	871	914	957
Tai Tapu	190	194	202	209	216	223	229	236
Springston	190	194	202	209	216	223	229	236
Darfield	1,131	1,253	1,398	1,543	1,686	1,828	1,970	2,112
Leeston	944	1,062	1,200	1,338	1,475	1,611	1,746	1,882
Castle Hill	124	149	177	205	233	260	288	316
Coalgate/Glentunnel/Whitecliffs	424	451	486	521	555	588	622	655
Doyleston	114	140	169	199	228	257	286	315
Dunsandel	178	184	194	203	213	222	230	239
Hororata	206	213	224	235	245	255	265	275
Kirwee	363	418	481	543	606	668	730	792
Lake Coleridge	61	65	69	74	79	83	88	92
Rakaia Huts	117	121	126	132	137	142	147	153
Sheffield/Waddington	164	171	181	191	201	211	220	230
Southbridge	356	370	390	410	430	448	467	486
Springfield	177	187	200	212	225	237	249	261
Rural*	5,797	6,173	6,652	7,130	7,599	8,059	8,519	8,979
Selwyn Total Households	**21,414**	**25,706**	**28,291**	**30,877**	**33,430**	**35,951**	**38,472**	**40,992**

*Including Burnham Military Camp

High Country Villages

Castle Hill presently has several subdivisions in varying stages of the resource process. The developable land in Castle Hill is finite, with capacity limited to approximately double the current number of houses there at present. Some small scale commercial (retail / café) development may also occur, as well as camping facilities across the other side of SH73 to the

[1] Waugh Infrastructure Management Ltd
[2] Natalie Jackson Demographics Ltd, (2017) *Selwyn Growth Model*

village. Arthurs Pass village is not currently expected to have any significant population increase or housing construction in the foreseeable future, however it will continue to experience significant increase in tourist numbers passing through.

Urban Development Strategy
The Greater Christchurch Urban Development Strategy (UDS) is a plan for managing urban development that protects water, enhances open spaces, improves transport links, creates more liveable centres and manages population growth in a sustainable way.

The UDS vision is for a Greater Christchurch for the residents of the area (living south of the Ashley River and north of the Selwyn River, and the Strategy partners, Environment Canterbury, the Christchurch City Council, Selwyn and Waimakariri District Councils and the New Zealand Transport Agency (formerly Transit New Zealand). The UDS provides the primary strategic direction for the Greater Christchurch area, including the location of future housing, development of social and retail activity centres, areas for new employment and integration with transport networks. It also establishes a basis for all organisations, not just the Strategy partners, and the community to work collaboratively to manage growth.

The primary interest in the UDS with regard to waste related activity relates to the location of future housing and retail areas. Selwyn's proximity to Christchurch, the associated employment opportunities in Christchurch, the improvements in the motorway network, combined with other lifestyle and amenity factors means that the District will continue to be an attractive option for future population growth.

In 2016 the strategy was revised to align with post-earthquake priorities and legislation. The key changes were the establishment of new guiding principles and strategic goals. The actions have been updated, with Selwyn District Council having a role as a UDS partner.

The strategic goals relevant to waste management are as follows:

- People and communities have equitable access to a range of integrated community infrastructure, facilities and services, including education, health, sport, recreation and core council services.
- The increasing diversity of the population and communities is recognised, and reflected in strategies, plans, programmes and projects.
- Resource efficiency is supported by energy and water conservation, waste minimisation and local food production.
- Air quality is improved and maintained.

Land Use Recovery Plan
The Land Use Recovery Plan (LURP) took effect in December 2013. It is a statutory document that directs the Christchurch City Council, Waimakariri and Selwyn District Councils and Canterbury Regional Council (ECan) to make changes to District Plans.

Selwyn District Council has developed Outline Development Plans (ODPs) in accordance with the UDS and subdivision criteria. Accordingly, the LURP has considerable influence on the scale and pattern of growth in Selwyn.

Of the increase in residents in Selwyn District, 85% will be in the urban area and, of those, 80% will be in the Land Use Recovery area with 55% in Rolleston, 35% in Lincoln and 8% in Prebbleton.

3.1.2 Legislative Changes

Of all existing legislation that could influence demand for waste services or infrastructure, the waste levy administered under the Waste Act 2008 has the greatest potential and most probability of any legislation to have an impact in the waste sector. The waste levy is under review at the time of writing. Possible changes could include increases in the levy charge per tonne of waste to landfill and, or a broadening of the scope of the levy application to include additional landfill classes. The effect of any changes to the waste levy are likely to drive increased affordability and uptake of products or services that minimise waste to landfill. We believe it would be prudent to expect some change to the waste levy within the coming review periods.

3.1.3 Level of Service Expectations

Expectations around the level of service in New Zealand have increased and continue to increase. This is driven by larger influences in society around the ability to purchase items on credit, the rise of internet shopping, and the ability to have most goods or services instantly or within a very short timeframe, even from the other side of the world. There is a growing intolerance to wait for goods or service. Social media provides the ability to compliment or complain about anything and to have an audience to listen and share their own experiences. There is a growing awareness of environment related issues, but, at the same time, society is increasingly detached from the environment.

Apart from society's general increased level of expectations outlined above, there is a local driver for increased expectations. This relates to residents who have moved to the area from an urban area such as Christchurch. In cases where residents have moved to a lifestyle block or rural area, there may not always be a kerbside collection service (as well as other services such as reticulated sewer or fibre internet connection). Or they may find the distance to the Pines RRP is too far.

Specific feedback received from the public over recent years includes:

- comment that the travel distances to the Council's only RRP are too great and more RRPs or transfer stations are needed;
- requests for a reuse store at the RRP;
- the need for better waste minimisation information;
- expectation of a urban level of kerbside bin service in rural and remote areas;
- a dissatisfaction at the fees charged by private waste collectors for household refuse bins; and
- requests for farm waste and recycling services.

3.1.4 Commercial and Industrial Growth

There are a number of commercial and industrial factors that influence demand for waste related services and on waste related infrastructure in the District.

Selwyn District's proximity to Christchurch as well as the railway links and major State Highway 1 improvements provides an attractive destination for commercial and industrial activity. Commercial and industrial activity is a driver of population growth in the District. This in turn drives local demand for goods and services, and subsequently waste generation.

Major employer sectors or industries in the District include:

- Agriculture
- Dairy processing – Fonterra, Synlait, Westland Milk all have large plants in Selwyn
- Commercial and Industrial (e.g. The Warehouse's distribution centre)
- Department of Corrections facilities
- Forestry
- Education and Local Government
- NZ Defence Force (Burnham Military Camp)
- Various small to medium industry e.g. Meadow Mushrooms
- Retail and service related businesses

Izone
Selwyn District Council has established the Rolleston Industrial Park (IZONE) on State Highway 1 and is one of New Zealand's larger industrial parks, covering 188 hectares and is currently home to more than 70 businesses including manufacturing, warehousing and logistics companies, such as Port of Tauranga's inland port. The wider Rolleston Industrial Zone has the potential to grow to over 459 hectares.

Iport
The Carter Group is in the process of developing the South Island Industrial Port, known as I PORT, a $500 million industrial and logistics park on 122 hectares (and 70 sites) of industrial-zoned land in Rolleston, with a rail linkage. Lyttelton Port Company has constructed an inland port at this location.

Rolleston Town Centre Master Plan
This Masterplan presents a future vision for Rolleston Town Centre and has been prepared in response to the growth projected for Rolleston over the next 20 years. It recognises that the evolution of the town centre is essential to providing a social and economic heart for the town and the District. This area will become Rolleston's town centre hub shopping area and the mix of shops would encourage people to visit for business and recreation. The community anchor / town square precinct and Rolleston Reserve nearby will also attract people to the retail area, creating a vibrant town centre. This precinct provides primarily for the establishment of retail stores, offices and ancillary offices, food and beverage shops, commercial / business services, trade suppliers, furniture equipment and lighting suppliers, education facilities and pre-schools, health care services, and public transport facilities / parking buildings.

3.1.5 Decisions by Private Waste Providers

As commercial and industrial activity grows in the District, particularly in Rolleston, private commercial waste collectors may increasingly find it is more beneficial to route their collection vehicles in a way that will enable them to dispose of waste in Christchurch as opposed to at Pines RRP. The reason for this is the ability to dispose of waste at a lower rate per tonne at a commercial only transfer station in Christchurch than what is offered at Pines RRP.

3.1.6 Gross Domestic Product (GDP)

In general, landfill waste quantities are linked to the economy (GDP). When GDP increases, there is a corresponding increase in waste produced. This correlates to increased manufacturing, importation of goods and provision of services. Waste volumes rise as a result of the increased activity. Significant improvements in reducing waste at source through design, and ability to reuse items and then recycle waste when the product is at the end of its useful life are the key methods in order to reduce the correlation between GDP and waste.

3.1.7 Changes in Consumption Habits

It is evident from kerbside residual waste and diverted material quantity data presented in Section 2.1.1 that recyclable tonnages are increasing, while kerbside residual tonnages are staying relatively static. This is anecdotally thought to be a result of the increasing packaging surrounding our goods.

Changes in technology (for example smart phones, social and news media platforms) are contributing to a global reduction in newsprint consumption. This has flow on effects to the composition of kerbside recyclables.

Other consumption trends are influenced by the marketing of consumer goods. For example, trends towards bottled beer, or towards tap beer can affect the volumes of glass in the general waste or in recycling collected. Other marketing promotions may result in changes to packaging materials, affecting their ability to be recycled.

3.1.8 Changes in Waste Management Approaches

A number of different drivers are present that influence the approaches taken to manage waste, these could include:

- Technological advances in recyclability and waste minimisation techniques (such as sorting techniques or the pyrolysis of timber, plastics and tyres).
- Industry Product Stewardship (and similar) schemes.
- Regulation – WMA requirement upon TAs to promote the effective and efficient waste management. Local policies and bylaws.
- Increased landfill costs from landfill operators.
- Landfill levy reviews may result in some increase to, or broadening of, the levy of $10 per tonne currently.
- Recyclable commodity market fluctuations and global economic activity affect the viability of recycling collections.
- Political party in government.

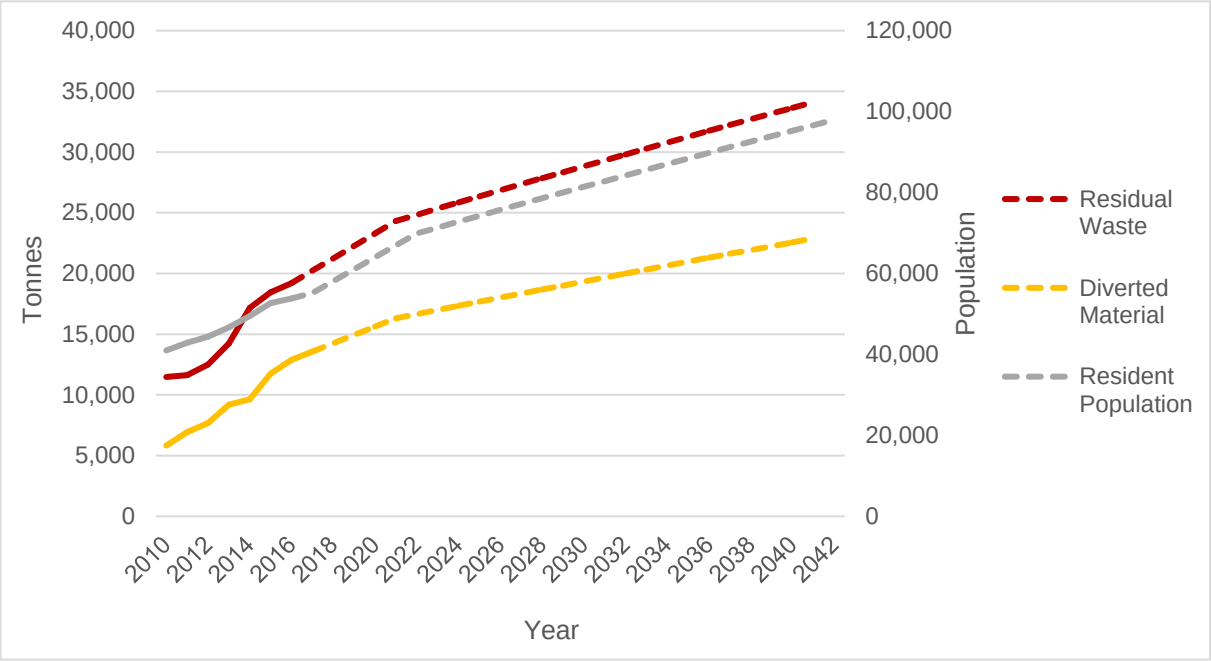
3.2 Future Demand and Quantities

The following section outlines the forecast future demands on the Council's waste management services resulting from predicted population growth, commercial and industrial growth and level of service expectations.

Figure 3-3 presents predicted waste and diverted material quantities in a status quo scenario, with the following assumptions:

- the quantity of total residual waste per capita continues to grow at current rates in line with population growth;
- kerbside collection services are accessible for 92% (or more) of the District's households;
- the kerbside organics collection service continues to grow at current rates;
- predicted quantities are based on population projections from the 2017 Selwyn Growth Model[1]; and
- commercial and construction waste volumes continue to grow at current rates.

Figure 3-3: Predicted Residual Waste and Diverted Material Quantities (Status Quo Scenario)



Status Quo and the Effect of Waste Minimisation Activities

The status quo shown in Figure 3-3 is a 'worst case' scenario because it does not take into account the waste minimisation effects of:

- increasing landfill prices;
- increasing waste disposal costs arising from climate change charges, which may cause an increase in RRP charges and an increase in residual waste collection charges. These increased charges incentivise waste reduction and diversion;
- promotion of the recycling collection to improve household yields;
- promotion of the organic collection to encourage more households to subscribe and to increase household yields;
- promotion of home composting;
- other waste minimisation activities;
- increasing public environmental awareness; and
- new technologies or the ability to recover additional materials from residual waste.

The cumulative effects of these factors will maintain, or potentially decrease, the current levels of residual waste per capita and increase the quantities of diverted waste. The potential impact is difficult to quantify, especially in view of the construction activity within the District and already relatively high kerbside diversion rates.

[1] Natalie Jackson Demographics Ltd, (2017) *Selwyn Growth Model*

3.2.1 Demand on Collection Services

Kerbside Residual Waste, Recycling and Organics Collections
Based on recent trend projections (Section 2.1.1) of future population and economic growth in the District, the quantity of residual waste is expected to outstrip population growth, because it is rising on a per capita basis at 2% per annum. The kerbside collection service is funded on a user-pays basis and can accommodate growth by adding bins and collection trucks. Kerbside Collection Contract no. 1144 now has generous assumed growth levels included to allow for this.

Potential exists to actively promote the organics service as well as to improve the separation of recyclables from residual waste. Both of these opportunities have the potential to alter the growth and uptake of the organics service as well as a decrease in the kerbside residual waste bin size and tonnages.

Increasing expectations from rural residents for an urban level of service (bin collection at gate) places increased demand with regard to 'dead running' time between less dense housing areas. This has the potential to marginally increase the collection cost per bin. Not all roads, however, are suitable for kerbside collection vehicles. Part of the solution is to manage the expectations of residents in these areas, and to look at what other facilities may improve the level of service they receive (i.e. a recycling drop-off facility on commonly travelled routes).

Collection from High Country Villages
The Arthur's Pass / Castle Hill frontload truck has somewhat limited capacity to cater for increasing demand on the current fortnightly collection cycle, particularly in summer. The installation of new recycle stations in 2017/18 will divert recyclable material from residual waste bins, easing volumes to some degree. Peak times for issues are around long weekends. Better forward planning to increase collections around these long weekends will help to alleviate some of these issues.

Lake Coleridge's refuse trailer is adequate for the existing village but would have to be reviewed if new subdivisions were developed in the future.

Compactors may become an economically viable option for some locations in the future.

Residual Waste and Recycling Collection from Public Litter Bins
The current capacity for collecting residual waste and recyclables from public litter bins is sufficient and additional capacity can be added when required.

3.2.2 Demand on Disposal and Diversion Infrastructure

Residual Waste
The residual waste compactor at Pines RRP had an original estimated maximum processing ability of 30,000 tonnes per annum. Based on this and an assessment by the site supervisor, the compactor is currently at approximately 70% of maximum capacity. According to current residual waste projections this would be approximately 2032. The existing residual waste compactor is expected to require replacement for end-of-life reasons in approximately 2027 and an assessment of replacement options will be done closer to this time.

Under the Pines RRP vision concept 'Reconnect' (July 2017), the potential development (refer Figure 3-4) of a reuse shop, salvage yard, micro enterprise, education and with advances in new technologies such as pyrolysis of timber, tyres and plastics could make significant inroads into reducing the residual waste tonnage projections. A detailed assessment of the feasibility of these activities is required to determine the potential reduction in residual waste and is planned for 2017-2019.

Cartage of waste from Pines RRP to Kate Valley Landfill is through Canterbury Waste Services Ltd (CWS) and is covered for a 20 year period (ending 2025) under an agreement between the Council and Transwaste Canterbury Ltd. CWS replace and add vehicle fleet and compactor bins as required to meet forecast demand. As the expiry of this agreement approaches it is likely that a tender will take place to ensure the best value and quality service provider is in place for the coming period.

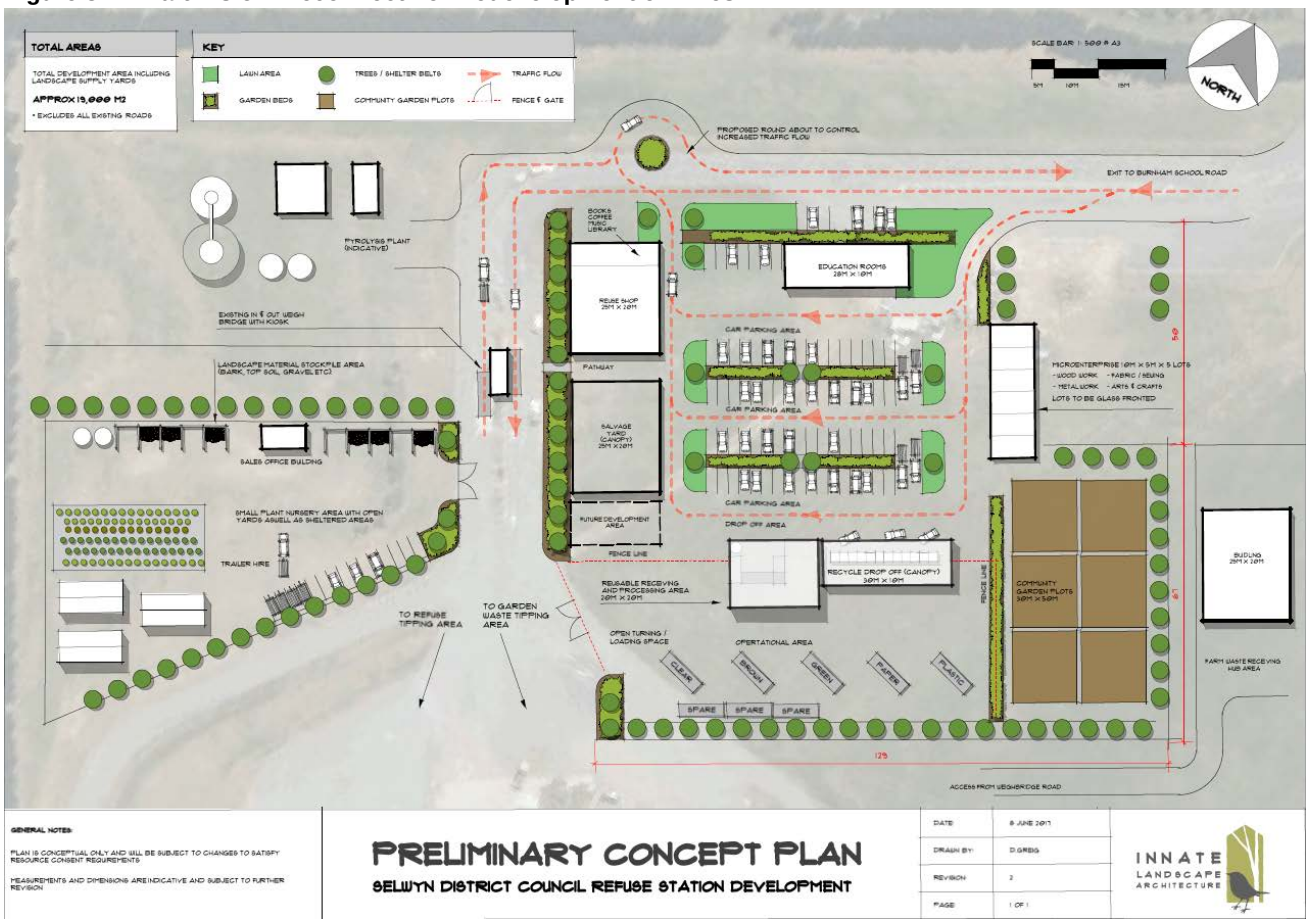
Kate Valley Landfill services Ashburton, Selwyn, Christchurch, Waimakariri and Hurunui Districts as well as some private transfer stations. It has a 35 year consent period (with approximately 23 years left) and a reported capacity that reaches well beyond the consent period. It is therefore concluded that the Council has no issue with landfill capacity over the period covered by this Waste Assessment.

Recyclable Materials

The current contractual arrangement between Council and EcoCentral Ltd (formally CCC Two Ltd) is in place until 2024. This agreement covers the processing and marketing / sale of recyclables from both kerbside collection and public drop-off and is flexible enough to meet future forecast demand. However, commodity markets for recyclable materials are volatile and future demands for the collected materials are expected to rise and fall. Material quality is a significant factor in market demand, however the key driver is the global economy, and Asian economies in particular. Increasingly strict regulation in China is impacting the ability to send some recyclables to manufacturing plants there.

Pines RRP has adequate capacity to accept, store and transfer public drop-off recyclables and to accommodate increasing quantities of materials during peak periods and with future population growth. If market demands for further source separation of recyclables increase, the RRP has sufficient space and flexibility to accommodate any change. The site is sufficiently large to cater for the District's resource recovery activities for the foreseeable future. An early stage vision and concept plan has been drawn up (July 2017), a draft of which is included as Figure 3-4 and Figure 4-2. This provides for opportunities to accommodate future market changes and growth in volumes.

Figure 3-4: Draft Vision 'Reconnect' for Redevelopment of Pines RRP



Organic Waste

At the time of writing the Pines RRP compost plant is over capacity. This has forced a review of the processing method. Consideration of a number of options is underway. A key factor in selecting a preferred option will be capacity for future growth. As shown in Figure 2-15, significant opportunity exists to divert more material from kerbside bins – particular organic material. This will be a key focus over the coming years as recently established new subdivision garden areas mature in the District.

Cleanfill

There are no forecast capacity restrictions on disposing of cleanfill. There is still significant space available, especially at the Springston Pit site. The remaining capacity of the Council's other gravel pit sites is not fully known and will be assessed in conjunction with Council's Property Department.

Community Waste Days
It is expected that demand will increase for the Community waste days held in Ellesmere and Malvern. Currently these are limited to accepting garden waste and, more recently, scrap metal. Consents have now been obtained to allow the increase in the number of events as well as the volumes and types of materials accepted at these events. It is envisaged that additional materials will be added progressively to these events over the coming years. Eventually these waste days will become mini 'pop-up' Resource Recovery Parks accepting a broad range of materials. This will increase the attendance at these events, and also the tonnage of material collected for recycling or disposal. Space onsite at these locations allows for suitable future expansion.

3.2.3 Demand for Council Supported Initiatives

Waste minimisation is currently promoted through a number of different initiatives. With increasing population and development in the District, along with increased expectations around environmental protection, the demand for more council supported initiatives is expected to increase. This may necessitate a review of the initiatives supported by Council, and of the funding allocated to ensure alignment with Council and WMMP goals and strategies.

4 Where We Want To Be

4.1 Legislative Context

This section outlines the legislative context in which planning for the future management of waste should be considered.

Waste Management and Minimisation legislation is provided primarily by the following three Acts:

- the Waste Minimisation Act 2008
- the Local Government Act 2002
- the Resource Management Act 1991

Other legislation, strategies or reports with relevance to Waste Management activities include:

- the Health Act 1956
- the Litter Act 1979
- the Climate Change Response Act 2002
- Health and Safety at Work Act 2015 (shortly to incorporate Hazardous Substances and New Organisms Act 1996)
- Freedom Camping Act 2011
- The New Zealand Waste Strategy 2002
- Industry generated guidelines and reports (referenced individually)

4.1.1 Waste Minimisation Act 2008

The purpose of the Waste Minimisation Act (WMA) is:

- to encourage a reduction in the amount of waste generated and disposed of within New Zealand.
- to reduce the environmental harm of waste and to provide economic, social and cultural benefits for New Zealand.

The Act attempts to achieve this by:

- imposing a levy on all waste disposed of in municipal landfills to generate funding to help local government, communities and businesses minimise waste
- establishing a process for government accreditation of product stewardship schemes which recognises those businesses and organisations that take responsibility for managing the environmental impacts of their products
- requiring product stewardship schemes to be developed for certain 'priority products' where there is a high risk of environmental harm from the waste or significant benefits from recovering the product
- allowing for regulations to be made to control the disposal of products, materials or waste, require take-back services, deposit fees or labelling of products
- allowing for regulations to be made that make it mandatory for certain groups (e.g., landfill facility operators) to report on waste to improve information on waste minimisation
- clarifying the roles and responsibilities of territorial authorities with respect to waste minimisation
- establishing the Waste Advisory Board to give independent advice to the Minister for the Environment on waste minimisation issues.

The WMA states that each TA must:

- have completed a review of its waste management and minimisation plan (WMMP) by 1 July 2012 – Section 50 (1), and that it be reviewed after each six year period thereafter.
- conduct a waste assessment before conducting the review – Section 50 (2);
- complete a review of its waste bylaw within 10 years of the last review – Section 58 (2); and
- either prepare a new or modified WMMP or, if it is decided to continue with an existing WMMP, notify the results of the review using the Special Consultative Procedure (SCP).

4.1.2 Waste Levy and Waste Minimisation Fund

The WMA provides for a waste disposal levy. At the time of writing the levy is set at $10 per tonne of waste to landfill. The purpose of the levy is to:

- encourage New Zealanders to take responsibility for the waste they produce and to find more effective and efficient ways to reduce, recycle or reprocess waste
- create opportunities for funding waste minimisation initiatives

The fund is administered by the Ministry for the Environment (MfE). Half of the fund is distributed to each TA for local waste minimisation initiatives. The remainder is allocated to administration costs and a nationally contestable fund, the Waste Minimisation Fund (WMF) for which applications are sought twice per year.
The Minister is required by the WMA to review the effectiveness of the levy at least every three years, with the next review to be completed by mid-2017. During previous reviews, discussion has been around considering increasing the levy amount, and increasing the range of waste types and facilities that the levy is applied to. It would be prudent to expect some increase in the amount of levy charged, possibly from the $10 per tonne currently to $15 per tonne in coming years.

4.1.3 Product Stewardship

Product stewardship is the responsible management of the environmental impact of a product. It aims to reduce the impact of manufactured products at all stages of the product life cycle.

Under a product stewardship scheme, any party involved in the life of a product (e.g., a producer, brand owner, importer, retailer or consumer) may accept responsibility for reducing the product's environmental impacts. For producers, this may mean designing products so they can be broken down into recyclable or reusable components. For retailers and consumers it may mean taking an active role in the responsible disposal or recycling of a product.

Under the Waste Minimisation Act 2008, the Minister for the Environment can declare a product to be a priority product. When this happens a product stewardship scheme must be developed and accredited. Currently no priority products exist. However a number of accredited voluntary product stewardship schemes exist for materials such as agricultural chemical containers, farm plastic recycling, photocopiers, paint, glass and public place recycling. Council is involved with some of these schemes, where appropriate.

4.1.4 The Local Government Act 2002

The Local Government Act empowers councils to promote the well-being of communities.

The purpose of local government is to:

- enable democratic local decision-making and action by, and on behalf of, communities
- promote the social, economic, environmental, and cultural well-being of communities in the present and for the future.

Solid waste collection and disposal is identified as a core service to be considered by a local authority.

The Local Government Act (LGA) 2002 contains several provisions relevant to TAs when preparing WMMPs. These include consultation and the creation and review of waste bylaw provisions, as well as the introduction of section 17a in 2014. Section 17a requires that local authorities review *"the cost-effectiveness of current arrangements for meeting the needs of communities within its district or region for good quality local infrastructure, local public services, and performance of regulatory functions. …*
A review under subsection (1) must consider options for the governance, funding, and delivery of infrastructure, services, and regulatory functions"

Reviews must be carried out if any significant changes to the service are proposed, before a contract for service delivery expires or at such times as the local authority considers desirable. Reviews must be carried out at least every 6 years. The Act also includes legislative requirements for TA decision making, including consideration of the benefits and costs of different options in terms of the present and future social, economic, environmental and cultural well-being of the district. Furthermore, the Act also includes requirements for information to be included in a long term plan (LTP), including summary information about the WMMP.

4.1.4.1 Bylaws

The Council's Waste Minimisation and Management Bylaw was last reviewed and altered in 2012 (a copy is provided in Appendix B).

This bylaw provides rules that apply to the Council's Waste and Diverted Material services, and certain other activities, which without regulation have the potential to threaten public health and safety and create a nuisance.

The bylaw is due to be reviewed again in 2022, unless there is sufficient reason to conduct and earlier review. There is work currently being considered by the Waste Management Institute of New Zealand to produce a "best practice" bylaw template. When this is completed, Council will consider whether the existing bylaw should undergo review earlier.

4.1.5 The Resource Management Act 1991

The Resource Management Act (RMA) is New Zealand's key environmental legislation and provides a framework for managing the effects of activities on the environment. With regard to waste related activities, the RMA controls the environmental impacts of waste facilities such as disposal facilities, recycling plants and cleanfills.

Under the RMA, regional councils are responsible for controlling the discharge of contaminants into or onto land, air or water. These responsibilities are managed through regional plans and the requirements of discharge consents issued. Requirements. Regional Council responsibilities also encompass the management of the adverse effects of storing, using, disposing of and transporting hazardous wastes.

TA responsibilities under the RMA include controlling the effects of land-use activities that have the potential to create adverse effects on the natural and physical resources of their district. Facilities associated with the disposal, treatment or use of waste or recoverable materials have the potential for adverse effects in this regard. Waste related facilities are subject to controls under District planning documents in terms of permitted, controlled, discretionary, non-complying and prohibited activities.

4.1.6 Other legislation

4.1.6.1 Health Act 1956

The Health Act 1956 places obligations on TAs (if required by the Minister of Health) to provide sanitary works for the collection and disposal of refuse, for the purpose of public health protection (Part 2 – Powers and duties of local authorities, s25). It specifically identifies certain waste management practices as nuisances (s29) and offensive trades (Third Schedule).

The Health Act enables TAs to raise loans for certain sanitary works and/or to receive government grants and subsidies, where available.

See also WMA 2008 (above) requirement to consult with Medical Officer of Health.

4.1.6.2 The Litter Act 1979

The Litter Act was established to make better provision for the abatement and control of litter. The Act is a mechanism for local government to address littering.

The functions of the Act include:

- establishing enforcement officers and litter wardens who may issue fines and abatement notices for litter offences
- allowing territorial authorities to force the removal of litter
- allowing public authorities to make by-laws pursuant to the provisions of the Act.

Enforcement officers may liaise with the Waste related Council officers with regard to litter issues such as fly tipping or the need for or placement of litter bin equipment.

4.1.6.3 The Climate Change Response Act 2002

The Climate Change Response Act 2002 put in place a legal framework to allow New Zealand to ratify the Kyoto Protocol and to meet its obligations under the United Nations Framework Convention on Climate Change.

This Act also enables the New Zealand Emissions Trading Scheme (NZ ETS). Operators of disposal facilities have specific obligations under the NZ ETS. The effect of the act on waste activities currently takes the form of an increase in landfill disposal cost. Recent increases in the purchase cost of carbon units combined with the phased removal of concessions from 1 January 2017 of subsidies, is expected to result in an increased cost (albeit small) of disposal to landfill.

The regional landfill at Kate Valley is a modern highly engineered facility with an efficient gas capture system. This results in a reduction in the potential financial impact of the NZ ETS on the District, when compared with regions with lower grade landfills.

4.1.6.4 Health and Safety at Work Act 2015

The HSWA and associated regulations are the primary legislation governing health and safety in New Zealand. The guidelines sit beneath health and safety legislation in a hierarchy of compliance, which also includes codes of practice and standards.

The main purpose of this Act is to provide for a balanced framework to secure the health and safety of workers and workplaces by:

- protecting workers and other persons against harm to their health, safety, and welfare by eliminating or minimising risks arising from work or from prescribed high-risk plant; and
- providing for fair and effective workplace representation, consultation, co-operation, and resolution of issues in relation to work health and safety; and
- encouraging unions and employer organisations to take a constructive role in promoting improvements in work health and safety practices, and assisting PCBUs and workers to achieve a healthier and safer working environment; and
- promoting the provision of advice, information, education, and training in relation to work health and safety; and
- securing compliance with this Act through effective and appropriate compliance and enforcement measures; and
- ensuring appropriate scrutiny and review of actions taken by persons

The Act refers to a 'PCBU'. A PCBU is a 'person conducting a business or undertaking'. While a PCBU may be an individual person or an organisation, in most cases the PCBU will be an organisation (for example, a business entity such as a company).

A PCBU must ensure, so far as is reasonably practicable, the health and safety of workers (e.g. employees or contractors, including their subcontractors or workers).

That other persons are not put at risk by the work of the business or undertaking (e.g. a visitor to the workplace, or members of the public who could be affected by a work activity).

HSWA requires workers to take reasonable steps to ensure the safety of workers at work.

The primary duty of care requires a PCBU to ensure health and safety 'so far as is reasonably practicable'.[1]

The implications in terms of resources – for example staffing, knowledge and equipment, as well as the financial effects of compliance with the relatively recent introduction of the HSWA are still being worked through. Cost is no longer accepted as a major consideration in determining the safest course of action.

[1] WasteMINZ, (2014) *Health and Safety Guidelines: for the Solid Waste and Resource Recovery Sector – parts one, two, three, four and five*

4.1.6.5 The Hazardous Substances and New Organisms Act 1996 (HSNO)

It is expected that the Hazardous Substances and New Organisms Act 1996 (HSNO) will be incorporated into the Health and Safety at Work Act in the near future. HSNO and its regulations control the import, manufacture, use and disposal of manufactured chemicals that have hazardous properties.

The HSNO Act prohibits the import or manufacture of a hazardous substance unless it is done under an approval. An approval sets controls (rules) for the substance throughout its lifecycle such as requirements for storage, identification, emergency management and disposal. The approval covers the lifecycle of the substance until it is disposed of according to the controls on the approval (e.g. treating it so that it is no longer a hazardous substance or exporting it from New Zealand as a waste).

4.1.6.6 Freedom Camping Act 2011

The Freedom Camping Act (2011) came into force on 30 August 2011. This statute provides local authorities with access to stronger regulatory measures to better manage the nuisance created by errant freedom campers.

Local authorities are able to issue infringement notices for the offence of depositing waste under Section 20(1)(b)(ii) and 20(1)(d).

4.2 Strategies and Industry Guidelines

4.2.1 New Zealand Waste Strategy 2010

The current New Zealand Waste Strategy was released by the Minister in October 2010. It provides a *"high level direction to guide the use of the tool available to manage and minimise waste in New Zealand"*[1]. The Strategy's flexible approach also aims to ensure that waste management and minimisation activities are appropriate for different local situations.

To achieve these aims the Strategy sets the following two goals:

- Goal 1: Reducing the harmful effects of waste; and
- Goal 2: Improving the efficiency of resource use.

The aims of these two goals are to *"provide direction to local government, businesses (including the waste industry), and communities on where to focus their efforts in order to deliver environmental, social and economic benefits to all New Zealanders"*.

The Strategy places a responsibility on regional councils to regulate the environmental effects of waste facilities through the implementation of the RMA and also in facilitating a collaborative approach amongst TAs towards waste planning. The waste industry has a role under the Strategy to increase the range of services available and implement good practices and codes of practice. Businesses and communities also have a responsibility to improve resources efficiency in the production and consumption of goods and services and by changing behaviours at home and work through education programmes.

4.2.2 Industry Guidelines and Standards

In addition to legislative requirements, the following guidelines / standards also influence waste management practices:

- Ministry for the Environment, (2015) *Waste Assessments and Waste Management and Minimisation Planning: A Guide for Territorial Authorities*
- Ministry for the Environment, (2002 & 2004) *Guidelines for the Management of Hazardous Waste (Module 1 & 2)*
- Ministry for the Environment (2010) *The New Zealand Waste Strategy*
- WasteMINZ, (2016) *Technical Guidelines for Disposal to Land*
- WasteMINZ, (2014) *Health and Safety Guidelines: for the Solid Waste and Resource Recovery Sector*
- WasteMINZ, (2008) *The New Zealand Resource Recovery Park Design Guide*

[1] Ministry for the Environment (2010), *The New Zealand Waste Strategy*

4.3 Planning Context

4.3.1 Planning Period

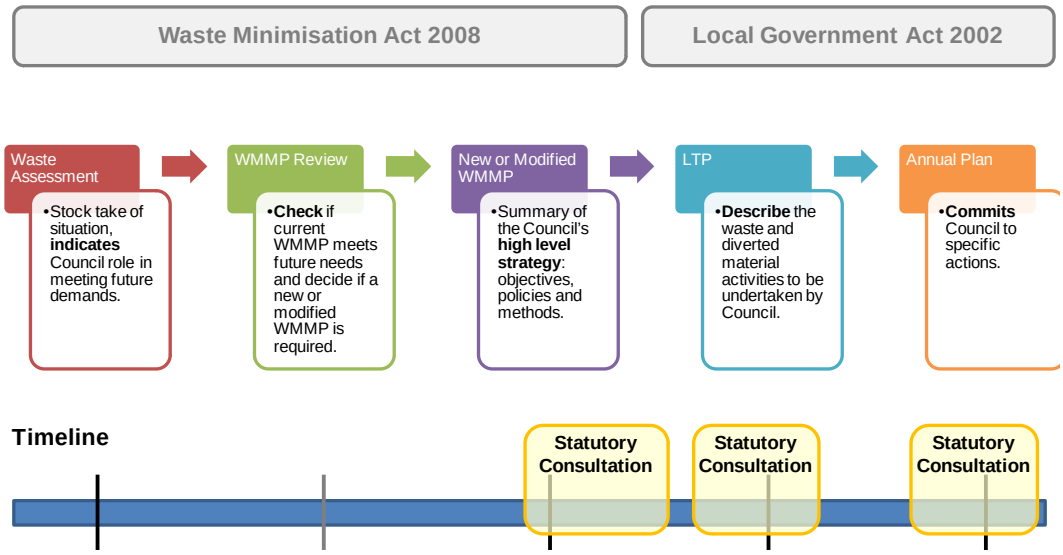
Waste management requires a long term view. In determining a planning period, factors to consider include changing attitudes to waste and its avoidance, new and planned legislation, duration of service contracts, evolving waste targets, financial investments in waste infrastructure and cost of finance, and changes in social behaviour and community needs. The period adopted for this assessment is approximately 20 years.

4.3.2 Planning Framework

4.3.2.1 Overview

Local, regional and national plans and policies affect the Council's provision of waste and diverted material services. Primarily, they are requirements under the WMA and the Local Government Act 2002. Figure 4-1 illustrates the statutory planning requirements that the Council is required to follow.

Figure 4-1: Planning Sequence



Other documents considered in the preparation of this WMMP include:

- Canterbury Land and Water Regional Plan (LWRP)
- Canterbury Air Regional Plan (CARP)
- Selwyn District Council Solid Waste Activity Management Plan

4.3.2.2 Long Term Plan

A Long Term Plan (LTP) is prepared in accordance with the Local Government Act 2002 and sets the framework that shapes community development. Outcomes indicate the community's desire for how the District should progress socially, environmentally, economically and culturally.

The goal of the solid waste management activity in the current 2015 – 2025 LTP is:

To promote effective and efficient waste management within the district, whilst having regard to the environmental costs and benefits to the District and ensuring that the management of waste does not cause a nuisance or be injurious to health.

The table below outlines how the waste management activity contributes to achieving the community outcomes.

Community Outcome	Statement	The Waste Management Activity contributes to the community outcome by
A clean environment	*Air, land, water and general environment to be kept in a healthy condition.*	*Providing a service to collect and dispose of solid waste, in a manner that minimises any potential harm to people and to the environment, and maximises the efficient use of resources.*
		Ensuring services are available for the effective and affordable collection, processing and marketing to beneficial use of diverted materials.
A healthy community	*Access to an effective and efficient refuse service.*	*Providing a service to collect and dispose of refuse in a manner that minimises any potential harm to public health.*

The LTP states that:

"The management of solid waste is a 'significant activity' under the terms of the Local Government Act 2002. The Council has a statutory obligation to promote effective and efficient waste management and to achieve this it takes a leadership role in managing waste activities. By managing the activity, the Council is in the best position to serve the needs of the community, provide a sustainable service and keep costs down."

4.3.2.3 Bylaws

Bylaws may be made for purposes sent out in the Local Government Act and the WMA. These include:

- setting out and formalising the responsibilities of the community and Council in regards to solid waste management and minimisation;
- regulating so as to address issues/demands that relate to solid waste are determined to be most appropriate way of addressing the issue or demand; and
- setting out rules and mechanisms for enforcement of the provisions of the bylaw.

Where a perceived need for a bylaw arises, section 155 of the Local Government Act 2002 requires a local authority, before making a bylaw, to determine whether a bylaw is the most appropriate way of addressing the perceived problem.

The Council last reviewed the waste bylaw in 2012:

- Waste Management and Minimisation Bylaw 2012

It is envisaged that when a best practice waste bylaw is developed by the industry, that this will be adopted in part or in their entirety for the District upon the next review.

4.3.2.4 Solid Waste Activity Management Plan

The Solid Waste Activity Management Plan (AMP) is currently under review prior to the 2018-2028 Long Term Plan (LTP). Information gathered during the preparation of this Waste Assessment will also be heavily utilised within the AMP. The AMP summarises the Council's strategic and long-term management approach for the provision of solid waste services to the District with the objective to ensure that appropriate resources are made available through financial forecasts, over the coming ten year period.

4.3.2.5 Canterbury Land and Water Regional Plan (LWRP)[1]

The purpose of the Canterbury Land and Water Regional Plan ("LWRP" or "the Plan") is to identify the resource management outcomes or goals (objectives in this Plan) for managing land and water resources in Canterbury to achieve the purpose of the Resource Management Act 1991 ("RMA"). It identifies the policies and rules needed to achieve the objectives, and provides direction in terms of the processing of resource consent applications.

Hazardous substances
There is a strong legislative focus on managing the use and storage of hazardous substances and disposal of hazardous waste to avoid endangering health and safety for people. The role of the LWRP is to ensure that the use of chemicals, spillage or disposal of hazardous waste does not result in contaminants entering or leaching into fresh water. It is also important to make sure hazardous substances do not contaminate soil, or where soil or land is already contaminated, the contaminants are contained or removed, so they do not contaminate water or other land, or affect people's health.

Cleanfills
The discharge of contaminants to groundwater from earthworks, excavation, waste collection or disposal sites and contaminated land is avoided or minimised by ensuring that:

- activities are sited, designed and managed to avoid the contamination of groundwater;
- existing or closed landfills and contaminated land are managed and monitored where appropriate to minimise any contamination of groundwater; and
- there is sufficient thickness of undisturbed sediment in the confining layer over the Coastal Confined Aquifer System to prevent the entry of contaminants into the aquifer or an upward hydraulic gradient is present which would prevent aquifer contamination.

Farms
Section 5 contains provisions for and rules associated with:

- the use of land for an on-site refuse disposal pit and the associated discharges onto or
- into land
- the use of land for an offal pit and the associated discharges onto or into land
- or farm rubbish pit provided that the discharge is only of refuse produced on the property where the pit is located and no kerbside community or local authority refuse collection is available and that the disposal and discharge are the subject of a Farm Environment Plan.
- the discharge of Municipal Solid Waste

Hazardous Industries and Activities
Hazardous Activity and Industries for the purposes of this Waste Assessment are those that appear on the Hazardous Activity and Industry List (HAIL) 2004. The HAIL is published as Schedule A in the Contaminated Land Management Guidelines - Ministry for the Environment (2004) updated September 2007 and is set out in Schedule 3 to the LWRP. Of relevance to waste is part *G. Cemeteries and waste recycling, treatment and disposal* – with references made to landfill sites, and sites where waste recycling or waste or wastewater treatment activities have or are occurring. The District has a number of old closed landfills as well as the Pines Resource Recovery Park site. These are registered in the Listed Land Use Register.

4.3.2.6 Canterbury Air Regional Plan (CARP)[2]

The Proposed Canterbury Air Plan seeks to implement a new air quality management framework for Canterbury. It aims to put in place processes and methods for managing air quality resources in Canterbury to achieve the purpose of the Resource Management Act 1991.

Notwithstanding local District or Rural Fire Authority bylaws, the relevance of the CARP to waste it that it sets out rules associated with the burning of inorganic wastes. The discharge of contaminants into air from outdoor burning of vegetation, paper, cardboard and untreated wood is a permitted activity under Rule 7.10, provided certain conditions relating to smoke management, time of year and distances to other properties are met.

[1] Environment Canterbury, (2015) *Canterbury Land and Water Regional Plan: Volume 1*
[2] Environment Canterbury, (2015) *Proposed Canterbury Air Regional Plan*

Rule 7.4 Reads: *Except where undertaken within the property of an industrial or trade premise and specifically authorised by resource consent granted pursuant to rule 7.31, the discharge of contaminants into air from the burning of any of the following materials is a prohibited activity:*

1. Wood treated or processed with preservatives, gluing agents, or impregnated with chemicals; and
2. Wood which is painted, stained or oiled; and
3. Metals and materials containing metals, other than as provided for by Regulation 9 of the Resource Management (National Environmental Standards for Air Quality) Regulations 2004; and
4. Materials containing asbestos; and
5. All rubber; and
6. All plastic; and
7. Medical waste, pathological wastes, quarantine waste, and animal waste, other than in a high temperature incinerator identified in Regulation 12 of the Resource Management (National Environmental Standards for Air Quality) Regulations 2004; and
8. Synthetic material, including but not limited to, motor vehicle parts, foams, fibreglass, batteries, chemicals, paint and other surface coating materials; and
9. Tar or bitumen; and
10. Used and waste oil, excluding re-refined oil; and
11. Sludge from industrial processes; and
12. Any container that has been used for the purpose of storing hazardous substances; and
13. Any materials within a landfill or waste transfer station or waste recovery area, but excluding gas emissions; and
14. Any fuel with a sulphur content of greater than 1% by weight.

These rules have the effect of limiting the types of materials, times of year and locations at which burning is an option. The benefit of these rules is that as more convenient and cost effective waste and recycling options become available for rural properties, these rules can be referenced when attempting to change behaviour.

4.3.3 District Plan

The District Plan contains rules governing the storage of waste and hazardous wastes. It sets out those waste related activities that are permitted, discretionary and restricted. The reason the plan includes rules relating to waste is the storage, treatment or disposal of either solid or liquid waste, other than in the small quantities generated by single households, usually has effects which are incompatible with residential amenity values. Such effects may relate to odour, vermin and unsightliness. At the time of writing, the District Plan is under review.

4.4 Vision

Selwyn District embraces the philosophy behind the Waste Hierarchy in every way that is economically and practically achievable, in order to maintain or improve the condition of air, land, water and the general environment for current and future generations.

4.5 Goals and Objectives

Goals
Selwyn District adopts the New Zealand Waste Strategy (NZWS) 2010 goals for the purposes of this Waste Assessment:

- Reducing the harmful effects of waste; and
- Improving the efficiency of resource use

Objectives

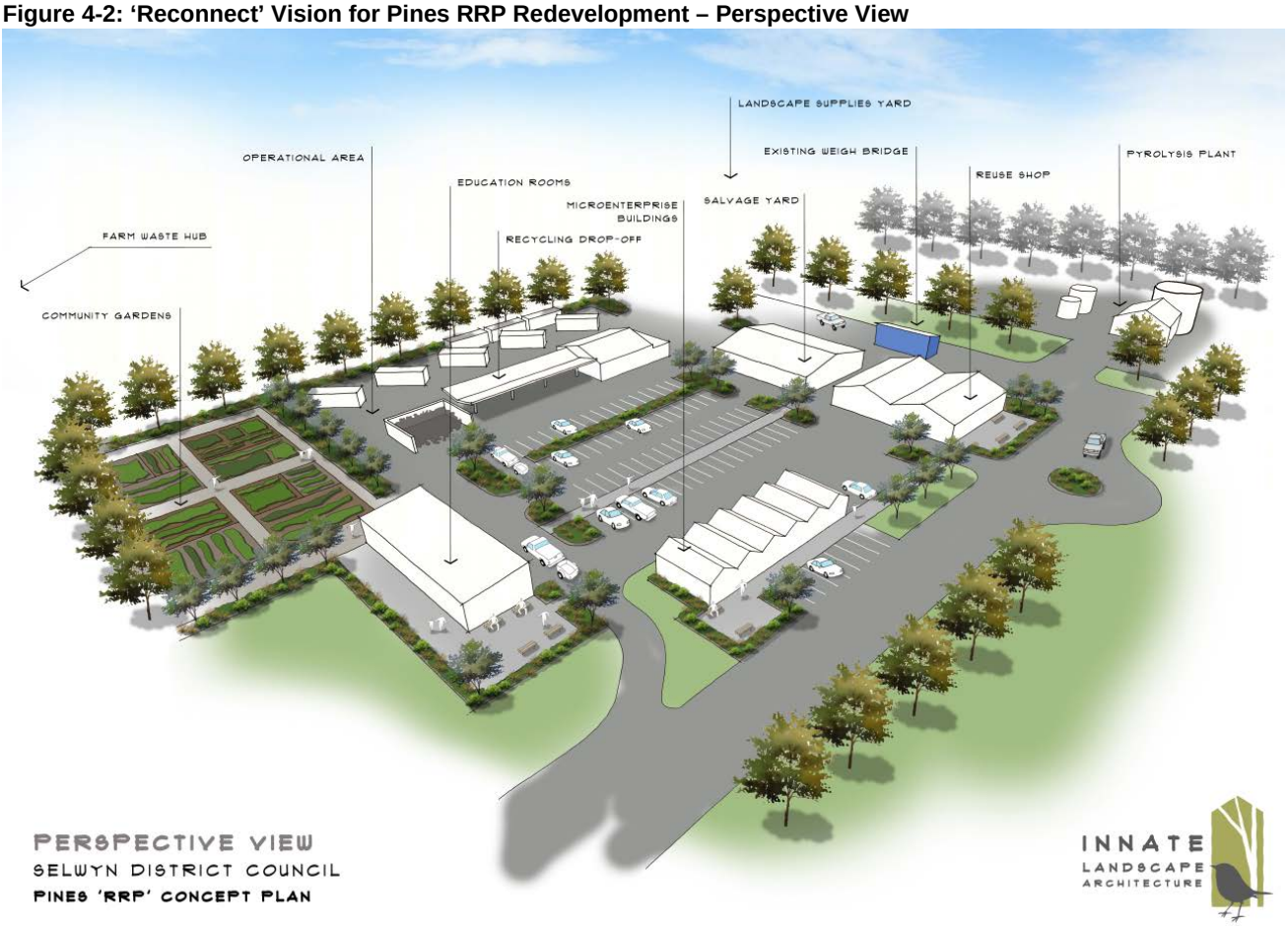
The following objectives have been established in order to achieve our goals:

- Achieve agreed levels of service for customers.
- Ensure the operational, financial, social, and environmental sustainability of the service.
- Reduce Council's exposure to risk, should there be a failure of the assets.
- Comply with all legislation.
- Safeguard human, animal and environmental health by promoting and encouraging safe and hygienic storage, handling, collection and disposal for all waste streams.
- Provide a cost effective, convenient, and comprehensive range of services to the community.
- Promote, engage in and fund activities aligned with the upper tiers of the Waste Hierarchy in order to reduce waste generation and waste volumes sent to landfill. Encourage and facilitate the development and uptake of services for rural areas in order to reduce waste to farm pits, or the burning of waste.
- Arrange local initiatives, or support and participate in community, regional, national, or industry led initiatives that reduce the harmful effects of waste, or minimise waste.
- Assist with enforcement action associated with illegal waste activity.
- To embrace changes in technology that improves any meaningful aspect of waste related activity.
- Improve Council and Community's level of knowledge and understanding of waste streams in the district, and their associated key issues. Provide guidance for waste related issues.
- Facilitate increased community engagement and ownership of waste generated. Foster innovation around the way that waste can be better managed. Leverage waste recovery activities to achieve positive social and environmental outcomes.

4.6 Targets

- Reduce the use of residual waste bags by 10% per annum through the promotion of wheelie bin alternatives, pricing incentives / disincentives and benefits of wheelie bins over bags.
- Actively and regularly promote the appropriate disposal of hazardous wastes to all sectors of community
- 2% decrease on kerbside residual waste per capita by 2021 over the 2019/20 year.
- No increase to the total district residual waste per capita by 2021 over the 2019/20 year.
- Divert 15% of annual construction waste material received at Pines RRP from landfill by 2021.
- Develop a comprehensive approach and strategy to waste education aligned with the education plans within the Reconnect Project.
- Develop a more thorough understanding of farm waste in the District and investigate options for and possible partnerships or methods to facilitate the development of services to farming areas so as to more appropriately dispose of waste by 2021.
- Operate at least twice per annum community pop up Resource Recovery Parks for Ellesmere and Malvern areas – with an increased range of materials accepted.
- Install recycling drop-off facilities at two locations by 2021.
- Provide a reuse shop option at Pines RRP by 2022.

Figure 4-2: 'Reconnect' Vision for Pines RRP Redevelopment – Perspective View



5 How We Are Going to Get There

The Council's proposals for meeting forecast demands, including proposals for new and replacement infrastructure, have been included in Section 5.2 of this Waste Assessment. The tables and sections below contains an assessment of the preferred options for addressing issues identified and for meeting the future demand with regards to:

- the NZWS 2010 goals;
- affordability;
- accessibility and convenience;
- ease of implementation;
- degree of impact on future waste to landfill;
- the Waste Hierarchy;
- costs and funding sources;
- timeframe;
- Council's intended role(s);
- protection of public health; and
- how effectiveness is measured and reported.

5.1 Options to Meet Future Demand

Growth expected and outlined above for the District over the next twenty years will increase the demand for waste management and minimisation services. This demand can be met by increasing capacity within existing services and infrastructure and / or by adding new infrastructure or services to meet demand.

In accordance with Section 51 of the WMA, and Section 77 of the LGA 2002, this section contains a summary of reasonably practicable options to meet the Council's forecast waste demands, as well as an assessment of the suitability of those options.

All options have been considered against a range of criteria including the positive and negative effects with regard to achieving the NZWS 2010 goals:

Goal 1: Reducing the harmful effects of waste; and
Goal 2: improving the efficiency of resource use.

The preferred options will be presented in the WMMP as methods for achieving effective and efficient waste minimisation.

5.2 Presentation and Assessment of Options to Meet Forecast Demand

Table 5-1, Table 5-2 and Table 5-3 summarise potential options to meet the forecast demand. Each option in the table is assessed for its advantages and disadvantages against the NZWS 2010 goals, affordability, accessibility and convenience, ease of implementation and degree of impact on future waste to landfill. Accessibility and convenience are assessed because they are important factors with regard to community buy-in and uptake of waste minimisation initiatives or services. The final column questions whether, on balance, the option is one that is preferred in terms of future investigation, and grades it in terms of priority after considering the preceding columns.

5.2.1 Collection Services

Table 5-1: Collection Services Options and Assessment

Service	Options to Meet the Forecast Demand	Assessment Criteria						Overall Assessment: 'Preferred' Option to Investigate Further?
		Reducing Harmful Effect of Waste (NZWS Goal 1)	Improving Efficiency of Resource Use (NZWS Goal 2)	Affordability	Accessibility / Convenience	Ease of Implementation	Degree of Future Impact on Waste to Landfill	
Kerbside Collection Services	Status quo: Continue extending kerbside collection services to cater for increasing population	✓ Removes residual waste for safe and appropriate disposal. ✓ Wheelie bins provide a convenient, comparatively clean and safe method of collecting kerbside waste. ✓ Increasing the quantities of diverted material reduces quantities of waste to landfill. ✓ Refuse bags provide a way of servicing off-route properties that otherwise may burn or bury waste. ✗ The use of refuse bags and recycling crates has health and safety, animal strike and windblown litter issues.	✓ The user pays charging system and the waste bin size options encourage waste minimisation. ✓ Increases quantities of diverted materials for recycling. ✗ The convenience of the larger refuse wheelie bins may be a disincentive to waste minimisation for some. ✗ Staying with the status quo does not actually 'improve efficiency of resource use'.	Moderate ✗ Landfill costs are projected to increase. As this occurs, more recycling options become viable. Limiting ourselves to the status quo closes off those future opportunities.	High ✓ Kerbside bins are the highest rated service in the resident's survey. This gives Council confidence that the service is convenient and accessible for the bulk of the District. ✗ Does not address those off-route properties not receiving a kerbside service.	High	Low	Yes Logical to continue with this, but to do so in conjunction with other options presented.

Service	Options to Meet the Forecast Demand	Assessment Criteria						Overall Assessment: 'Preferred' Option to Investigate Further?
		Reducing Harmful Effect of Waste (NZWS Goal 1)	Improving Efficiency of Resource Use (NZWS Goal 2)	Affordability	Accessibility / Convenience	Ease of Implementation	Degree of Future Impact on Waste to Landfill	
Kerbside Collection Services	Proactively reviewing properties not currently receiving kerbside service –is extension feasible?	✓ Wheelie bins provide a convenient, comparatively clean and safe method of collecting kerbside waste. ✓ Increasing the quantities of diverted material reduces quantities of waste to landfill. ✓ Reduces the use of farm pits or burning of waste. ✓ Reduces the use of waste bags, reducing the likelihood of manual handling injuries for public and contractor, as well as reduces vermin issues associated with animals and torn bags. ✓ Reducing the use of recycling crates by providing wheelie bins to more properties will reduce windblown litter.	✓ Increases quantities of diverted materials for recycling. ✗ Increased 'dead running' of truck as a result of low density of properties in these areas. Results in increased emissions.	Moderate ✓ Expected that the higher costs associated with collecting from a lower density collection route would be spread over the total household base, and therefore the cost per house would be relatively small.	High • This is a relatively frequent item raised by individuals to the Councillors.	Low ✗ Quantifying the effect on truck numbers, route and day changes required, as well as understanding the level of uptake will be a significant piece of work.	Low • May actually result in more waste to landfill, as a result of decreased reliance of burning or farm pits. But this is a positive outcome.	Yes (medium priority)
	Increased number and distribution of kerbside drop-off points	✓ Increases the quantities of diverted material reduces quantities of waste to landfill	✓ Makes use of existing collection method, with very little additional vehicle running	High ✓ Very little expense required to implement.	Moderate ✓ Improves accessibility and convenience for off-route residents.	High	Low	Yes

Service	Options to Meet the Forecast Demand	Assessment Criteria						Overall Assessment: 'Preferred' Option to Investigate Further?
		Reducing Harmful Effect of Waste (NZWS Goal 1)	Improving Efficiency of Resource Use (NZWS Goal 2)	Affordability	Accessibility / Convenience	Ease of Implementation	Degree of Future Impact on Waste to Landfill	
Kerbside Collection Services	Provision of recycling and refuse drop-off facilities to accept material from houses not on kerbside routes	✓ Increases the quantities of diverted material reduces quantities of waste to landfill. ✓ May reduce incidence of residents burying waste in farm pits, or burning it. ✓ Will provide a facility for freedom campers and tourists to use – reducing litter issues.	✓ Encourages waste minimisation.	Moderate	Moderate ✓ Increases accessibility and convenience for off-route residents.	Moderate • Requires identifying and gaining lease or ownership of suitable land, site works, capex etc.	Low • May actually result in more waste to landfill, as a result of decreased reliance of burning or farm pits. But this is a positive outcome.	Yes Still a viable option to address those properties unable to access kerbside services.
	Phase out residual waste bag option (move to wheelie bins only)	✓ Will reduce the risk of injuries to collectors. ✓ Will reduce incidents of animals tearing open bags – and subsequent animal health effects as well as litter from torn bags. ✗ Not providing a bag option to off-route properties may increase the use of less desirable alternatives for disposal of waste (e.g. burning) because of the inconvenience associated with taking a wheelie bin to a collection point compared with a bag.	✓ May result in some decrease in the use of single use plastic refuse bags.	High ✓ The smallest residual waste bin option is only marginally higher to a bag cost if put out weekly. ✗ Very low volume waste producers, or holiday homes may be financially worse off by the removal of the bag option.	Moderate ✓ Convenient for those with direct kerbside collection. ✗ May present issues for those who have to transport their waste to a collection point (note: other options presented do address this issue).	Moderate ✗ Some opposition expected.	Low	Yes (medium priority) Only on the proviso that off-route properties are provided with an easy to use alternative (e.g. a conveniently located recycling / refuse drop off station).

Service	Options to Meet the Forecast Demand	Assessment Criteria						Overall Assessment: 'Preferred' Option to Investigate Further?
		Reducing Harmful Effect of Waste (NZWS Goal 1)	Improving Efficiency of Resource Use (NZWS Goal 2)	Affordability	Accessibility / Convenience	Ease of Implementation	Degree of Future Impact on Waste to Landfill	
Kerbside Collection Services	Fortnightly kerbside residual waste collection (instead of current weekly)	✓ Expect a reduction in waste to landfill. ✓ Reduced collection vehicle emissions. ✗ Fortnightly collection may create odour issues with putrescible waste and disposable nappies. ✗ Restrictions in refuse container capacity may result in contamination of recycling and organics waste.	✓ Kerbside collection trucks travel shorter distances. ✓ Encourages waste minimisation by restricted refuse container capacity. ✗ 80L refuse bins will be too small for fortnightly service and would have to be replaced with 140L (or larger) bins (high cost to purchase and reissue these bins).	Moderate ✓ Expected reduction in annual residual waste collection cost. ✗ 80L refuse bins will be too small for fortnightly service and would have to be replaced with 140L (or larger) bins (high cost to purchase and reissue these bins).	Moderate	Low ✗ A significant amount of work would be required to implement this.	Moderate	Yes (review longer term)
	Further source separation of recyclables (e.g. separate glass collection)	✓ Improves quality of diverted materials – reducing waste to landfill. ✗ Separate glass collection via crate may increase manual handling injuries (strains, cuts). ✗ Increased number of collection trucks and/or kilometres travelled (increased emissions). ✗ Potential reduction of visual street appeal if more collection containers are required.	✓ Increases quality and value of diverted material, and decreases recyclable material rejected due to contamination with glass fines. ✗ Increased number of collection trucks and/or kilometres travelled.	**Low** ✗ Altered vehicle or additional collection vehicles required.	Low ✗ Increased effort required by residents, additional container to manage.	Low ✗ Would require significant additional expense, education (behaviour change) and renegotiation of large contracts. ✗ Expect significant push back by residents.	Low ✗ We expect that a separate glass collection would have a very minimal impact on waste to landfill.	No Would require significant additional expense, education (behaviour change) and renegotiation of large contracts, for little gain.

Service	Options to Meet the Forecast Demand	Assessment Criteria						Overall Assessment: 'Preferred' Option to Investigate Further?
		Reducing Harmful Effect of Waste (NZWS Goal 1)	Improving Efficiency of Resource Use (NZWS Goal 2)	Affordability	Accessibility / Convenience	Ease of Implementation	Degree of Future Impact on Waste to Landfill	
Kerbside Collection Services	Promotion of organics service in serviced areas	✓ Will receive greater quantities of organic waste and reduce waste to landfill.	✓ Increases beneficial use of organic waste. ✓ Improved collection density, therefore improved efficiency of collection trucks. ✗ Some small reduction in the potential for landfill gas extraction at Kate Valley Landfill.	High	High	High	High	Yes A logical step that is relatively 'untapped' so far.
	Supply of home kitchen food waste caddies and biodegradable liners	✓ Will receive greater quantities of organic waste and reduce waste to landfill – and resultant methane generation.	✓ Increases beneficial use of organic waste.	Unknown ✓ Cost reduction potential from food waste reduction in landfill disposal fees.	High	Moderate	Moderate	Yes, but not initially (medium term)
	Compulsory organics collection in serviced areas	✓ Will receive significantly greater quantities of organic waste and reduce waste to landfill. ✗ Risk of higher contamination levels, resulting in higher processing costs and/or lower quality compost output.	✓ Increases beneficial use of organic waste. ✓ Potentially allows for the consideration of a fortnightly refuse collection in these areas. ✓ Improved collection density, therefore improved efficiency of collection trucks. ✗ Some small reduction in the potential for landfill gas extraction at Kate Valley Landfill	Medium ✗ Unfairly charges those residents who currently home compost and would receive little benefit from a compulsory organics bin.	High	Low ✗ This would require somewhat of a move away from the current flexibility to choose bin options and the user pays ethos Public consultation would be required. ✗ Possible confusion at the boundary of the serviced and unserviced areas.	High	No Much more could be done to promote the existing optional service before Council looks to make it compulsory. Pricing incentives and disincentives already make it an attractive option that is resulting in steady growth in the service.

Service	Options to Meet the Forecast Demand	Assessment Criteria						Overall Assessment: 'Preferred' Option to Investigate Further?
		Reducing Harmful Effect of Waste (NZWS Goal 1)	Improving Efficiency of Resource Use (NZWS Goal 2)	Affordability	Accessibility / Convenience	Ease of Implementation	Degree of Future Impact on Waste to Landfill	
Kerbside Collection Services	Installation of RFID tags on wheelie bins (and potential future charging options)	✓ Future charging options (pay per lift or pay per weight) encourage waste minimisation behaviour, thereby minimising harmful effects of waste. ✗ If pay per lift implemented there is potential for increased contamination of the divertible streams as they will likely have higher capacity bins and a lower cost of collection.	✓ Future potential charging options (pay per lift or pay per weight) encourage less frequent bin presentation at kerbside – reducing truck emissions and wear and tear. ✓ Reduced staff time and resources involved in investigating and resolving issues, because RFID tags would provide more certainty around bin allocation and missed collections.	Moderate ✓ Allows for improved accuracy of database. This allows reliable and accurate charging for bins in service. ✓ Future charging options such as pay per empty, or pay by weight would financially reward residents producing less waste (and vice versa). ✗ Capex quite significant.	High ✓ All bins would be tagged.	Moderate • Capex Budget required. • Council approval likely to be required proceed with this system (due to potential for public concern).	High ✓ Future charging options could result in significant behaviour change.	Yes (medium priority) Prudent to future proof by continuing to add RFID tags on new bins. Further research required before considering changes to pay per lift type options
	Investigate future kerbside contract ownership structure/model of wheelie bins	N/A	N/A	Moderate • Council will end up paying either to own the bins at the end of current contract, or will pay indirectly through a new (the next) contract. This is so as to level the playing field in future tenders.	N/A	Moderate ✗ If new contract was to specify all new bins (to level playing field), then this is a significant task.	N/A	Yes (low priority)

Service	Options to Meet the Forecast Demand	Assessment Criteria						Overall Assessment: 'Preferred' Option to Investigate Further?
		Reducing Harmful Effect of Waste (NZWS Goal 1)	Improving Efficiency of Resource Use (NZWS Goal 2)	Affordability	Accessibility / Convenience	Ease of Implementation	Degree of Future Impact on Waste to Landfill	
Kerbside Collection Services	Develop a strategy to increase the diversion of recyclable or recoverable (organic) materials from kerbside residual waste	✓ Reduces waste to landfill.	✓ Increases beneficial use of organic waste ✓ Increases quantities of diverted materials for recycling. ✗ Some small reduction in the potential for landfill gas extraction at Kate Valley Landfill.	High	High	High	High	Yes (high priority)
Collection from High Country Villages	Status Quo: Increase the number or size of refuse / recycling bins or frequency of collection to accommodate demand or growth	✓ Removes residual waste for safe disposal. ✓ Removes divertible material for recycling.	✗ Staying with the status quo does not actually 'improve efficiency of resource use', and may potentially increase resource use (fuel) as a result of distances to High Country Villages.	High	Moderate	High	Low	Yes Logical to continue with this, but to do so in conjunction with other options presented
Public Litter Bins	Status Quo: Increase the number of refuse / recycling bins to accommodate demand or growth	✓ Removes residual waste for safe disposal. ✓ Removes divertible materials for recycling.	✗ Staying with the status quo does not actually 'improve efficiency of resource use'.	High	High	High	Low	Yes (low priority) Logical to continue with this, but to do so in conjunction with other options presented
	Audit existing residual waste litter bins to identify further diversion opportunities (i.e. adding a recycling bin)	✓ Increases diversion of material from landfill.	✓ Increases quantities of diverted materials for recycling.	High	High	High	Low	Yes (long term priority)

Service	Options to Meet the Forecast Demand	Assessment Criteria						Overall Assessment: 'Preferred' Option to Investigate Further?
		Reducing Harmful Effect of Waste (NZWS Goal 1)	Improving Efficiency of Resource Use (NZWS Goal 2)	Affordability	Accessibility / Convenience	Ease of Implementation	Degree of Future Impact on Waste to Landfill	
Public Litter Bins	Review management of litter bins and fly tipping within Council	✓ Would provide greater oversight of litter bins and fly-tipping in the district, allowing better management. ✓ Would avoid "grey area" management challenges such as bus stop bins.	✓ May allow for consolidation of service providers. ✓ Allow more efficient oversight of District litter – and therefore potentially a strategy to better management. ✗ Would require increased staff time of whichever department litter bins were allocated to.	High	N/A	High Staff time and contract management is the only requirement.	N/A	Yes (low priority but worth investigating)
All Collection Services	Investigate and embrace new or emerging technologies associated with collection services	✓ New technologies may improve quality of diverted materials (sensors recognising contamination, sensors that can communicate with residents)	✓ New technologies may improve efficiency of collections	Unknown	Unknown	Unknown	Unknown	Yes Keep informed of advances in this area
	Invite private collectors to provide waste and recycling services to the District (Council exits the service and leaves this activity to private providers)	✗ Expect recycling volumes would decrease under a private user pays scheme.	✗ Expect decreased efficiency associated with different collection companies driving the same roads but collecting from different houses.	Moderate ✗ Expect that no private provider could reduce the price offered through the buying power of a Council district wide service.	N/A	Low ✗ Expect that there would be significant opposition from residents and Councillors to changes to a highly rated service.	Low ✗ Increased landfill waste expected.	No
	Use any potential budget surpluses generated to assist with other waste related activities. Or specifically increase some collection service components in order to generate surplus for use for other waste related activities	✓ Increases funds available for activities that achieve NZWS Goal 1. ✗ Artificially high costs may exacerbate fly tipping.	✓ A small increase spread across a large number of properties generates a reasonable revenue stream that could potentially be used in activities that promote resource use efficiency.	High	N/A	High	Dependent	Yes (low priority) Only if suitable projects were suited to this type of funding, and it was deemed the most appropriate way to fund a project

Service	Options to Meet the Forecast Demand	Assessment Criteria						Overall Assessment: 'Preferred' Option to Investigate Further?
		Reducing Harmful Effect of Waste (NZWS Goal 1)	Improving Efficiency of Resource Use (NZWS Goal 2)	Affordability	Accessibility / Convenience	Ease of Implementation	Degree of Future Impact on Waste to Landfill	
All Collection Services	Use regulatory tools such as the Waste Bylaw to for example alter refuse collection start times	N/A	✓ Longer collection hours reduces the number of trucks required – enables more bins collected per truck in service.	High	High • Some potential increased inconvenience for residents associated with putting bins out earlier.	Moderate • Bylaw review required. • Consultation required.	N/A	Yes (low priority) If demand / growth required it. Consider at next bylaw review. Has been raised by collection contractor.

5.2.2 *Disposal and Diversion Infrastructure*

Table 5-2: Disposal and Diversion Infrastructure Options and Assessment

Service	Options to Meet the Forecast Demand	Assessment Criteria						Overall Assessment: 'Preferred' Option to Investigate Further?
		Reducing Harmful Effect of Waste (NZWS Goal 1)	Improving Efficiency of Resource Use (NZWS Goal 2)	Affordability	Accessibility / Convenience	Ease of Implementation	Degree of Future Impact on Waste to Landfill	
Pines Resource Recovery Park	Status quo	✓ Maintains current performance in this regard, but doesn't improve. ✗ Longer-term the volumes will outstrip the throughput capacity of the facility if changes are not made.	✗ Does not improve performance in this regard.	Moderate • Landfill costs will increase, as will landfill levy charges. Not improving diversion options will ultimately cost the community more to dispose of waste.	Moderate • Concern regarding travel distance for households in outlying areas (addressed in other options)	High	Low	Medium Medium to longer term changes are needed to cope with volumes.
	Increase the opening and staff operational hours	✓ Refuse is accepted and managed in a manner that ensures minimal harmful effects. ✓ Improved opening hours may have a beneficial effect on fly tipping in the District.	✓ Increasing the operating capacity of the existing facility is a more efficient use of resource and finances than creating new facilities in other areas of the District.	High	Moderate ✗ Concern regarding travel distance for outlying areas (addressed in other options). Although improved hours will make it easier to access for those travelling longer distances.	High • Would require contract amendment and budget consideration.	N/A	Yes Longer-term: Not currently a priority. Analysis of demand would be required to determine whether longer hours would provide any material benefit to residents. No indication that this is currently the case.
	Increase the compactor capacity throughput (upgrade compactor)	N/A	✓ Upgraded compactor capacity at the end of its useful life allows maximum use of existing facility at Pines RRP and improved operational efficiency	High • However only worthwhile doing when at capacity limit or nearing compactor end of life.	N/A	High	N/A	Yes (long term) Recent refurbishments have extended the life of the asset. Throughput capacity currently fine and can be increased by extending staff hours before looking at larger capacity compactor. Would look to re-assess max capacity.

Service	Options to Meet the Forecast Demand	Assessment Criteria						Overall Assessment: 'Preferred' Option to Investigate Further?
		Reducing Harmful Effect of Waste (NZWS Goal 1)	Improving Efficiency of Resource Use (NZWS Goal 2)	Affordability	Accessibility / Convenience	Ease of Implementation	Degree of Future Impact on Waste to Landfill	
Pines Resource Recovery Park	Improve Council knowledge of commercial, construction and public waste composition received at Pines RRP	✓ Improving Council's knowledge of the composition of these waste streams enables decisions to be made in order to divert additional waste from landfill	✓ Enables the recovery of additional resources from the waste stream. These can be reused, recovered or recycled	High	N/A	Moderate Impact on operations at Pines RRP whilst SWAP studies are taking place.	None directly	Yes (high priority)
	Investigate the feasibility of a waste sorting line, implement if appropriate	✓ Enables the recovery of additional resources from the waste stream – greater diversion = less harmful effects on the environment.	✓ Enables the recovery of additional resources from the waste stream. These can be reused, recovered or recycled.	High ✓ Envisage that waste sorting is achievable for less than the cost of compacting and sending waste to landfill.	High ✓ Most waste in the district currently goes to Pines RRP, and most growth is in the Rolleston / Lincoln / West Melton areas. This is the most logical place for the waste sort line.	Moderate • Requires feasibility study, and trials / budget.	High	Yes (high priority)
	Work with 3rd parties to facilitate pyrolysis or similar processing techniques to reduce waste to landfill	✓ Assists with the recovery of materials and energy from waste streams. ✓ Potentially a better alternative to other methods of handling some materials (e.g. tyre stock piles, or export to countries with low health and environmental standards).	✓ Assists with the recovery of resources that would otherwise be landfilled.	High Expect 3rd party to fund themselves.	High ✓ Good location – proximity to Christchurch material volumes and South Island road and rail network.	Moderate • A number of uncertainties exist at present.	High	Yes (low priority) Maintain open mind to opportunities.
	Address apparent lack of awareness of Pines RRP facility existence	✓ May reduce fly tipping, burying or burning of waste.	✓ May result in shorter travel distances for those traveling to Christchurch for waste disposal.	High	Moderate	High	Low	Yes (high priority)

Service	Options to Meet the Forecast Demand	Assessment Criteria						Overall Assessment: 'Preferred' Option to Investigate Further?
		Reducing Harmful Effect of Waste (NZWS Goal 1)	Improving Efficiency of Resource Use (NZWS Goal 2)	Affordability	Accessibility / Convenience	Ease of Implementation	Degree of Future Impact on Waste to Landfill	
Pines Resource Recovery Park	Investigate the feasibility of a landscape supplies yard to assist with sale of compost generated and trailer hire to improve convenience, implement if appropriate	✓ Provides more reasons to visit the RRP facility – spin off effect for recycling, future reuse shop etc.	✓ Located at the RRP provides synergies with resident vehicle movements.	High Expect 3rd party to fund for the most part.	High ✓ Most waste in the district currently goes to Pines RRP, and most growth is in the Rolleston / Lincoln / West Melton areas. ✓ Seen as a good fit for the site and a drawcard to encourage activity in other areas of waste minimisation.	Moderate	N/A	Yes (low priority). 3rd party to do the investigation work associated with this part of the facility.
	Provide a structure and utilities for a farm waste / recycling receiving and processing area	✓ Assists with the diversion of waste and recyclables from farm pits and the burning of farm waste. ✓ Enables the recovery of additional materials.	✓ Located at Pines RRP enables efficient processing and diversion of waste, as well as recyclables, collected by existing RRP providers.	High ✓ It is envisaged that the initial capital outlay for structure would be funded by budget surplus or WMF Levy Fund application.	High ✓ Located at Pines RRP enables efficient processing and diversion of waste, as well as recyclables, collected by existing RRP providers.	Moderate	Moderate	Yes (medium priority)

Service	Options to Meet the Forecast Demand	Assessment Criteria						Overall Assessment: 'Preferred' Option to Investigate Further?
		Reducing Harmful Effect of Waste (NZWS Goal 1)	Improving Efficiency of Resource Use (NZWS Goal 2)	Affordability	Accessibility / Convenience	Ease of Implementation	Degree of Future Impact on Waste to Landfill	
Pines Resource Recovery Park	Investigate the feasibility of a reuse shop and salvage yard, implement if appropriate	✓ Reduces waste to landfill, associated negative effects including those associated with the transport of waste to landfill. ✗ Risk associated with accepting items – hazards such as needles, cleanliness, electrical safety, manual handling of heavy items.	✓ In the Waste Hierarchy material reuse is a better option than recycling. ✓ Potentially valuable resources can be reused instead of being landfilled. ✗ Requires close supervision to prevent receipt of unsuitable goods. ✗ Materials (concrete and construction) required to construct a facility for reuse.	High ✓ It is envisaged that the initial capital outlay for structure would be funded by budget surplus or WMF Levy Fund application. ✓ Would generate a modest income that is expected to cover staff wages and potentially provide a surplus to contribute towards other recovery related activity onsite. ✓ Would provide a source of low cost items for the community to purchase.	High ✓ Pines RRP is closest to the largest population centres in the District, and therefore customer base.	Low	Moderate	Yes (high priority) A key missing part of the RRP facility at present.
	Investigate the feasibility of an Environmental Education Centre, implement if appropriate	✓ Educate residents, children and community groups about waste delated (and broader environmental) issues. ✓ Ability to influence the "Reduce" part of the Waste Hierarchy.	✓ Promotes efficiency of resource use messages and behaviour. ✓ Educates public regarding best practice recycling behaviours – reduces contamination of recoverable streams. ✗ Materials (concrete and construction) required to construct a facility for environmental education.	High ✓ Fund educator through local Waste Minimisation Levy Funding. ✓ Funding already exists for some waste education programmes in the District.	High ✓ Pines RRP is closest to the largest population centres in the District.	Low ✗ Considerable amount of work required to design and construct a suitable facility, as well as develop a plan around how to run activity there.	Moderate • Long term change in thinking and behaviour.	Yes (medium term)

Service	Options to Meet the Forecast Demand	Assessment Criteria						Overall Assessment: 'Preferred' Option to Investigate Further?
		Reducing Harmful Effect of Waste (NZWS Goal 1)	Improving Efficiency of Resource Use (NZWS Goal 2)	Affordability	Accessibility / Convenience	Ease of Implementation	Degree of Future Impact on Waste to Landfill	
Pines Resource Recovery Park	Investigate the feasibility of microenterprise units on site to repurpose and upcycle waste, implement if appropriate	✓ Impacts the "Reuse" part of the Waste Hierarchy, hereby reducing waste to landfill and the associated harmful effects.	✓ Impacts the "Reuse" part of the Waste Hierarchy. ✗ Materials (concrete and construction) required to construct a facility for microenterprise activities.	Moderate • Unlikely to generate much revenue, but also unlikely to require much ongoing cost support, after the initial capital cost of construction.	High ✓ Pines RRP is closest to the largest population centres in the District.	Low • Considerable amount of work required to design and construct a suitable facility, as well as to develop a plan around how to run this operation.	Moderate • Long term change in thinking and behaviour.	Yes (medium term)
	Carting organic waste to external composters for processing	✓ Reduces organic waste to landfill. ✗ Harmful effects of additional handling and cartage (emissions).	✗ Additional handling and cartage is not resource efficient from a transport perspective.	Moderate • Depends on location of 3rd party processor (local or distant – e.g. Living Earth).	Moderate • Depends on location of 3rd party processor (local or distant – e.g. Living Earth).	Moderate • Would require additional collection vehicles, rerouting and budget increase and negotiation with external party.	N/A • The composting method chosen makes little impact on volumes recovered.	Yes Dependent on processing cost.
	Windrow or aerated static pile composting of garden waste	✓ Reduces organic waste to landfill. ✗ Potential for increased vermin presence as a result of not being an in-vessel composting process.	✓ Has the capacity to increase diversion of organics waste from landfill. ✓ Utilises existing machinery onsite (loaders). ✓ Utilises existing land at Pines RRP (i.e. new site or infrastructure not required). ✓ Existing infrastructure is over capacity. New composting method is required. ✗ Reduces potential for landfill gas extraction at Kate Valley Landfill. ✗ A more resource intensive composting process than some alternatives.	High	N/A	Moderate ✗ Resource consent changes required. Food waste windrow composting potentially more difficult to get consented in a windrow operation.	N/A • The composting method chosen makes little impact on volumes recovered.	Yes Windrow composting to be assessed due to current capacity issues.

Service	Options to Meet the Forecast Demand	Assessment Criteria						Overall Assessment: 'Preferred' Option to Investigate Further?
		Reducing Harmful Effect of Waste (NZWS Goal 1)	Improving Efficiency of Resource Use (NZWS Goal 2)	Affordability	Accessibility / Convenience	Ease of Implementation	Degree of Future Impact on Waste to Landfill	
Pines Resource Recovery Park	Invite Private providers to own and operate Pines RRP (Council leaves this activity to private providers)	✗ Expect recycling volumes would decrease under a private user pays scheme.	✗ Expect recycling volumes would decrease under a private user pays scheme.	Moderate ✗ Expect a reduction in affordability due to private company drivers to generate a profit.	Moderate ✗ Possibly a reduction in accessibility as opening hours might change to only suit large volume customers (not small residential loads).	Low ✗ Expect that there would be significant opposition from residents and Councillors to changes to a highly rated service.	Low ✗ Increased landfill waste expected.	No
Other	Provide permanent Satellite transfer stations in Malvern and Ellesmere areas	✓ Likely to reduce burning and disposal into farm pits in these areas.	✗ Replication of a facility that exists at Pines RRP, but on a smaller scale. ✗ Double handling of waste back to Pines RRP for compaction to Kate Valley Landfill. ✗ Staffing resources required for low volumes of waste. ✗ Capital cost for a facility with low volumes of waste to pay for it.	Low ✗ High relative cost for the volumes of waste expected.	Moderate ✓ Improved accessibility for some residents in Ellesmere and Malvern. ✗ Limited operational hours and still considerable travel distances for many.	Low	Low	No Alternative lower cost options such as 'pop up' transfer stations would be more economical and meet the demand to some degree.
	Provide 'Pop-up' Resource Recovery Park / Transfer Station facility periodically to Ellesmere and Malvern communities	✓ Likely to reduce burning and disposal into farm pits in these areas.	✓ Temporary facilities don't require the infrastructure associated with a permanent facility. ✓ Existing trained staff can be utilised to operate a pop up facility for a day.	High	Moderate • Not as accessible as a permanent facility (in terms of opening hours), but the number of days offered per year could be increased if demand was sufficient.	High ✓ Proven basic level offering already takes place. ✓ Consents are now in place to expand materials accepted at these pop-up days.	Low	Yes (high priority) These pop-up RRPs offer improved accessibility to the outlying areas of the District which is valued in the community.

Service	Options to Meet the Forecast Demand	Assessment Criteria						Overall Assessment: 'Preferred' Option to Investigate Further?
		Reducing Harmful Effect of Waste (NZWS Goal 1)	Improving Efficiency of Resource Use (NZWS Goal 2)	Affordability	Accessibility / Convenience	Ease of Implementation	Degree of Future Impact on Waste to Landfill	
Other	Use regulatory tools to capture tonnage and composition data from private collectors	✓ Provides better oversight of waste situation enabling directed efforts to minimise waste.	✓ Provides better oversight of waste situation enabling directed efforts to minimise waste.	High	N/A	High	N/A	Yes Easy to implement.

5.2.3 Other Items and Council Supported Initiatives

Table 5-3: Other Items and Council Supported Initiatives Options and Assessment

Service	Options to Meet the Forecast Demand	Assessment Criteria						Overall Assessment: 'Preferred' Option to Investigate Further?
		Reducing Harmful Effect of Waste (NZWS Goal 1)	Improving Efficiency of Resource Use (NZWS Goal 2)	Affordability	Accessibility / Convenience	Ease of Implementation	Degree of Future Impact on Waste to Landfill	
Education	Continue to support education related programmes such as Enviroschools, Waste Busters, Lincoln Envirotown Responsible Business Assessments and other activities (e.g. Waste Free Parenting classes) or organisations that fit within the Education Strategy	✓ Educating residents, students and businesses encourages awareness of waste related issues, and thinking about possible solutions. This has a flow on effect in terms of behaviours in other areas of the community (e.g. taking the message home).	✓ Educating residents, students and businesses encourages awareness of waste related issues, and thinking about possible solutions. This has a flow on effect in terms of behaviours around purchasing decisions and using resources.	High	High • The Education Strategy would involve a mixture of in-schools sessions, as well as at Pines RRP, web based, business assessments etc.	High	Moderate (hard to quantify)	Yes (medium priority). Continue as is currently until new Education Strategy is formed, then review existing arrangements.
	Develop a more comprehensive strategy for education	✓ Will help improve reduction of waste at source, thereby prevents any possible harmful effects. ✓ Educating residents, students and businesses encourages awareness of waste related issues, and thinking about possible solutions. This has a flow on effect in terms of behaviours when handling waste.	✓ Educating residents, students and businesses encourages awareness of waste related issues, and thinking about possible solutions. This has a flow on effect in terms of behaviours when handling waste.	Low (but also a qualitative item to try to measure the impact for)	High • The education strategy would involve a mixture of in-school sessions as well as at Pines RRP, web based, business assessments etc.	High • Requires critical thinking and considered input from a number of people.	Moderate (hard to quantify)	Yes (medium term)

Service	Options to Meet the Forecast Demand	Assessment Criteria						Overall Assessment: 'Preferred' Option to Investigate Further?
		Reducing Harmful Effect of Waste (NZWS Goal 1)	Improving Efficiency of Resource Use (NZWS Goal 2)	Affordability	Accessibility / Convenience	Ease of Implementation	Degree of Future Impact on Waste to Landfill	
Education	Hazardous waste disposal education	✓ Improve awareness of what is hazardous waste, and how / where to dispose of it safely. ✓ Hazardous waste has increased potential to cause significant environmental harm compared to regular household waste. Efforts to minimise incorrect disposal reduce the risk of harm.	✓ Directs public to utilise existing facility designed to receive hazardous waste, or to hazardous waste collection service providers for commercial volumes.	High	Moderate • Some issues for outer reaches of the District. Possible potential for inclusion in pop-up RRP facilities.	High	Low	Yes (medium priority)
Support / Collaboration	Continue to subsidise recovery of some material streams to encourage uptake of service – for example E-waste and Car Seat Recycling Scheme	✓ Increases uptake of waste minimisation services, normalises societal behaviour and expectation. ✓ Some items such as E-waste have increased potential to cause environmental harm over general waste due to heavy metal contents.	✓ Makes use of existing facility at Pines RRP. ✓ Recovers some rare metals and other resources that can be used for future product manufacture.	High	Moderate • Pines RRP limits some outlying residents. This may be alleviated by inclusion of these material streams at pop-up RRP sites.	High	Low • Low volumes but potentially high environmental impact if disposed of incorrectly.	Yes (continue as currently)
	Continue to lend support to and encourage national initiatives, including Product Stewardship schemes (for example AgRecovery)	✓ Combined Council support can influence the success or otherwise of initiatives that reduce the harmful effects of waste.	✓ Often national initiatives such as AgRecovery recover resources for recycling as part of the programme.	High	Moderate • Dependent on initiative or programme.	Moderate - High • Dependant on initiative or programme.	Moderate • Dependant on initiative or programme.	Yes (continue as currently)
	Continue to collaborate internally and with other Councils	✓ Collaboration with other Councils enables pooled resources and ideas to be shared when tackling the harmful effects of waste (CHER Group), for example illegal dumping.	✓ Collaboration with other Councils enables pooled resources and ideas to be shared.	High	N/A	High	N/A	Yes (continue as currently)

Service	Options to Meet the Forecast Demand	Assessment Criteria						Overall Assessment: 'Preferred' Option to Investigate Further?
		Reducing Harmful Effect of Waste (NZWS Goal 1)	Improving Efficiency of Resource Use (NZWS Goal 2)	Affordability	Accessibility / Convenience	Ease of Implementation	Degree of Future Impact on Waste to Landfill	
Other	Old closed landfills – investigate current status, existence of other unknown landfills, liability, potential remediation costs	✓ Improved knowledge of these will enable Council to minimise harm to the environment (by for example groundwater testing may detect and issue that could be remediated).	N/A	Moderate	N/A	Moderate	N/A	Yes (long-term priority)

5.3 Further Assessment of Preferred Options

As stated in the LTP, "*The management of solid waste is a 'significant activity' under the terms of the Local Government Act 2002. The Council has a statutory obligation to promote effective and efficient waste management and to achieve this it takes a leadership role in managing waste activities. By managing the activity, the Council is in the best position to serve the needs of the community, provide a sustainable service and keep costs down.*"

Under the Health Act, the Council has a responsibility to provide for collection and disposal of refuse and other offensive matter.

By maintaining a proactive leadership role, the Council protects the community's interests and fulfils Council's legal responsibilities.

This section identifies the Council's intended role in meeting the forecast future demands in terms of:

- **Governance:**
  Mechanisms for how the Council implements the preferred options;
- **Regulator:**
  The Council using a legal mechanism to facilitate or promote waste management and waste minimisation e.g. bylaws and District Plan rules;
- **Community Leader:**
  The Council providing information and promoting awareness and involvement in waste management and waste minimisation activities;
- **Advocate:**
  The Council promoting actions to address waste reduction and waste management issues which are outside the Council's direct control e.g. lobby Environment Canterbury and the Government for appropriate legislation, standards and guidelines; and
- **Financier:**
  The Council investing in initiatives which facilitate waste management and minimisation activities e.g. grants and subsidies, developing a waste minimisation industry cluster.

Table 5-4 below summarises the preferred options and issues to be addressed (excluding status quo), and reflects upon the Waste Hierarchy, the funding mechanism envisaged, an indication of timing, Council's role in delivering the option and how the effectiveness of the option would be measured.

Table 5-4: Further Assessment of Options and Issues

Preferred Option or Issue to be Addressed	Waste Hierarchy Tier Relevance	Funding Mechanism	Timeframe	Council Role(s)	Public Health Benefits	How Effectiveness is Measured and Reported
Continue to provide and extend kerbside collection services	Recycle Recover Disposal	Waste Budget	Ongoing	Governance Financier	Reduced burning, burying and fly tipping of waste	Number of houses accessing kerbside service Percentage of District with access to kerbside service
Proactively reviewing properties not currently receiving kerbside service –is extension feasible?	Recycle Disposal	N/A Internal and Contractor staff time	Short term (1-2 years)	Governance Community Leader Advocate	Reduced burning, burying and fly tipping of waste	Number of houses accessing kerbside service after review and extension of routes has occurred, that were not previously able to access
Increased number and distribution of kerbside drop-off points	Recycle Disposal	Local TA Waste Levy National Waste Levy Targeted rates	Short term (1-2 years)	Governance Community Leader	Reduced burning, burying and fly tipping of waste	Increase in the number of kerbside drop-off points
Provision of recycling and refuse drop-off facilities to accept material from houses not on kerbside routes	Recycle Disposal	Local TA Waste Levy National Waste Levy Targeted rates	Medium (3-5 years)	Governance Community Leader Financier	Reduced burning, burying and fly tipping of waste	Installation of recycling and refuse stations for remote/rural houses
Phase out residual waste bags	Reduce Reuse	Targeted refuse rates	Medium (3-5 years)	Governance Regulator – bylaws Community Leader	Reduced manual handling injuries, reduce odour, and vermin issues	Monitoring bag orders/purchases for declining numbers
Fortnightly kerbside residual waste collection (instead of current weekly)	Recover Recycle Disposal	Targeted refuse rate (reduced cost)	Long term (5+ years)	Governance Regulator Financier	No - possible reduced benefit due to potential for increased odour and vermin. However appears to be satisfactory in other districts.	Successful switch to fortnightly service Reduction in residual waste Minimal increase in contamination in kerbside organic and recycling Minimal increase in fly tipping
Promotion of organics collection service in serviced areas	Recover	Targeted refuse rates	Unknown	Governance Community Leader Financier	N/A	Increased uptake of organic bin service at levels above average
Supply of home kitchen food waste caddies and biodegradable liners to make separating food waste more convenient and hygienic	Recover	Local TA Waste Levy National Waste Levy Targeted rates	Medium (3-5 years)	Governance Community Leader Financier	None or Minimal	Increased food waste % within organics collection
Installation of RFID tags on wheelie bins (and potential future charging options)	Recover Recycle Disposal	Local TA Waste Levy National Waste Levy	Medium (3-5 years)	Governance Regulator Financier	N/A	Reduction in database and charging errors Reduced missed bin disputes Improved diversion (if alternative charging options are pursued)

Preferred Option or Issue to be Addressed	Waste Hierarchy Tier Relevance	Funding Mechanism	Timeframe	Council Role(s)	Public Health Benefits	How Effectiveness is Measured and Reported
Investigate future kerbside contract ownership structure/model of wheelie bins	N/A	Waste Budget	Long term (5+ years)	Governance Financier	N/A	Bins are owned by Council Creates a level playing field for future tenders
Develop a strategy to increase the diversion of recyclable or recoverable (organic) materials from kerbside residual waste	Recycle Recover	Waste Budget	Medium (3-5 years)	Governance Community Leader Financier	N/A	Lower percentage of organic / recyclable materials in the residual waste stream
Audit existing residual waste litter bins to identify further diversion opportunities (i.e. adding a recycling bin)	Recycle Disposal	Township litter bin budget Local TA Waste Levy	Long term (5+ years)	Governance Financier	N/A	Improved diversion of recyclables from litter bins
Review management of litter bins and fly tipping within Council	Recycle Disposal	N/A Council staff time	Short term (1-2years)	Governance Leader Advocate Financier	Potential for increased proactivity in these areas	Data measuring and analysis would take place Hot spot areas targeted
Investigate and embrace new or emerging technologies associated with collection services	All	N/A Council staff time	Ongoing	Governance Regulator Financier	Potentially – dependent on the technology	Dependent on the technology
Use any potential budget surpluses generated to assist with other waste related activities. Or specifically increase some collection service components in order to generate surplus for use for other waste related activities	All	Budget surplus or specific targeted cost increases	Unknown	Governance Financier	Potentially – dependent on the activity	Dependent on the activity
Use regulatory tools such as the Waste Bylaw to for example alter refuse collection start times	Reduce	N/A Council staff time	Medium (3-5 years)	Governance Regulator	N/A	Avoidance of requiring additional collection vehicles
Continue to provide Pines RRP facility	Recycle Recover Treatment Disposal	Waste Budget User pays	Ongoing	Governance Community Leader Financier	Reduced burning, burying and fly tipping of waste	Pines RRP usage and satisfaction rating

Preferred Option or Issue to be Addressed	Waste Hierarchy Tier Relevance	Funding Mechanism	Timeframe	Council Role(s)	Public Health Benefits	How Effectiveness is Measured and Reported
Increase the opening and staff operational hours at Pines RRP	N/A	User pays	Long term (5+ years)	Governance Community Leader	Reduced burning, burying and fly tipping of waste	Usage of facility within those extended hours. Staff productivity within those extended hours
Increase the residual waste compactor capacity throughput (upgrade compactor at Pines RRP)	Disposal	User pays	Long term (5+ years)	Governance Financier	N/A	New compactor installed with greater processing capacity per hour
Improve Council knowledge of commercial, construction and public waste composition received at Pines RRP	Reuse Recycle Recover Disposal	Local TA Waste Levy	Short term (1-2 years)	Governance Financier	N/A	Council is more aware of the composition of the residual waste stream enabling better waste minimisation / diversion planning
Investigate the feasibility of a waste sorting line, implement if appropriate	Reuse Recycle Recover	Local TA Waste Levy	Medium (3-5 years)	Governance Financier	N/A	If implemented, by the diversion of waste (measured by weight) via the sorting line
Work with 3rd parties to facilitate pyrolysis or alternative processing techniques to reduce waste to landfill	Recover	3rd party	Unknown	Governance	Yes – via improved treatment of an alternative to current issues such as tyre stockpiles	Whether an 'alternative processing' partnership is able to be struck
Address apparent lack of awareness of Pines RRP facility awareness	Recycle Recover Treatment Disposal	Waste Budget	Short term (1-2 years)	Community Leader Financier	Reduced burning, burying and fly tipping of waste	Usage of the Pines RRP is increased as a percentage in the Annual Resident Surveys
Investigate the feasibility of a landscape supplies yard to assist with sale of compost generated and trailer hire to improve convenience, implement if appropriate	Recover (provides outlet for recovered material – increasing sustainability of the recovery option)	3rd party User pays	Medium (3-5 years)	Governance	N/A	Whether a landscape supplies yard is implemented or not Sales of the compost produced
Provide a structure and utilities for a farm waste / recycling receiving and processing area	Recycle Disposal	Local TA Waste Levy National Waste Levy User pays	Medium (3-5 years)	Governance Regulator Community Leader Financier	Reduced burning and burying of farm waste	Volumes of material diverted through system Survey of customers "what would you have done prior to this option (burnt, bury etc?)"
Investigate the feasibility of a reuse shop and salvage yard, implement if appropriate	Reuse Recycle	Local TA Waste Levy National Waste Levy Budget surpluses Operation costs covered by income generated	Medium (3-5 years)	Governance Community Leader Financier	Socially – mental health Loneliness, social connectedness	Volumes of material diverted through reuse shop and salvage yard – intention is to build in the ability to weigh all items as they are sold

Preferred Option or Issue to be Addressed	Waste Hierarchy Tier Relevance	Funding Mechanism	Timeframe	Council Role(s)	Public Health Benefits	How Effectiveness is Measured and Reported
Investigate the feasibility of an Environmental Education Centre, implement if appropriate	Reduce Reuse Recycle Recover Treatment Disposal	Capital: Local TA Waste Levy National Waste Levy Operation: Budgeted item	Medium (3-5 years)	Governance Community Leader Financier	Improved awareness of all waste issues, including appropriate or best practice options for managing wastes	Throughput of visitors Sessions run Feedback provided Survey of "what have you changed in your behaviours" since attending a session
Investigate the feasibility of microenterprise units on site to repurpose and upcycle waste, implement if appropriate	Reuse Recycle	Capital: Local TA Waste Levy National Waste Levy Operation: Volunteer run Funded by income from items sold	Medium (3-5 years)	Governance Community Leader Financier	Socially – mental health Loneliness, social connectedness	No. of tenants Use of space Products made Volumes of Materials diverted (all outgoing products weighed before sale) Skills passed on
Carting organic waste to external composters for processing	Recovery	Targeted rates	Short term (1-2 years)	Governance Financier	No more than current	Organic waste is processed in accordance with relevant consents and a saleable compost product is produced
Windrow composting of garden waste	Recovery	Targeted rates	Short term (1-2 years)	Governance	No more than current	Organic waste is processed in accordance with relevant consents and a saleable compost product is produced
Provide 'Pop-up' Resource Recovery Park / Transfer Station facility periodically to Ellesmere and Malvern communities	Reuse Recycle Recover Disposal	Budgeted item User pays Sale of scrap metal	Current. But expansion of materials over short term 1-2 years	Governance Community Leader Financier	Reduced burning and burying of waste Increased opportunity to remove wastes etc from properties	Numbers of vehicles attending Volumes of materials received Community feedback
Use regulatory tools to capture tonnage and composition data from private collectors	Disposal	Environmental Services Budget	Short term (1-2 years)	Governance Regulator	N/A	Better oversight of weight and composition of residual waste collected by private contractors enabling more directed waste minimisation efforts Records are supplied Reporting would be consolidated so commercial confidence is kept
Continue to support Education related programs such as Enviroschools, Waste Busters, Lincoln Envirotown Responsible Business Assessments and other activities (e.g. Waste Free parenting classes) or organisations that fit within the Education Strategy	Reduce Reuse Recycle Recover Treatment Disposal	Budgeted item	Ongoing	Governance Community Leader Advocate Financier	Improved awareness of all aspects of waste – including potential harm from incorrect management	No. of students involved

Preferred Option or Issue to be Addressed	Waste Hierarchy Tier Relevance	Funding Mechanism	Timeframe	Council Role(s)	Public Health Benefits	How Effectiveness is Measured and Reported
Develop a more comprehensive strategy for education	Reduce Reuse Recycle Recover Treatment Disposal	Budgeted item	Medium (3-5 years)	Governance Community Leader Advocate	Improved awareness of all aspects of waste – including potential harm from incorrect management	Audience reached Feedback sought from activities within different education streams
Hazardous waste disposal education	Treatment	Budgeted item	Ongoing	Governance Community Leader Financier	Improved awareness of what is hazardous and how and where it should be disposed of.	Increased disposal of haz waste at Pines RRP
Continue to subsidise recovery of some material streams to encourage uptake of service – for example E-waste and Car Seat Recycling	Recycle Treatment	Local TA Waste Levy	Ongoing	Governance Community Leader Financier	Reduce incidence of E-waste in environment Improved awareness of car seat safety issues associated with car seat expiry dates	Volumes of each material stream received
Continue to lend support to and encourage national initiatives, including Product Stewardship schemes (for example AgRecovery)	Reduce Reuse Recycle Recover Treatment Disposal	Dependent upon the initiative	Ongoing	Governance Community Leader Advocate	Potentially, dependent upon the initiative	Dependent on case by case basis
Continue to collaborate internally and with other Councils	Reduce Reuse Recycle Recover Treatment Disposal	N/A	Ongoing	Governance Community Leader Advocate	Possibly – for example issue of medical waste or sharps in general refuse	Dependent on case by case basis
Old closed landfills – investigate current status, existence of other unknown landfills, liability and potential remediation costs	N/A	Waste Budget	Long tern (5+ years)	Governance Financier	Minimise potential risk to public health through leachate contamination of groundwater	A report is produced detailing information about old landfills. This report would potentially drive an action plan (e.g. bore installation, further invasive investigation)

Environmental, Economic, Social and Cultural Outcomes

Status quo options for all services and infrastructure only maintains yesterday's level of service, with yesterday's economic, environmental, social and cultural advantages and disadvantages. By limiting ourselves to continuing with the status quo and not looking to improve our services and infrastructure over time, then Council will fail to meet community expectations around level of service. Level of Service expectations do not and have not stayed stagnant. As economic factors around landfill disposal fee increases and regulation providing for disincentives such as landfill levies, it is unwise to only look to maintain the current services and infrastructure. Increasing environmental awareness results in an increasing expectation by the community to be tackling issues.

In terms of social outcomes loneliness is emerging as an issue in New Zealand, particularly for the elderly. With an ageing demographic, this is set to increase. Concepts such as the reuse shop / salvage yard at the Pines RRP provide an opportunity for more isolated individuals to have contact with others and some social interaction. This was a common feature / function noted at these types of facilities across New Zealand during recent visits.

Micro enterprise units offer an opportunity to pass on skills to others, upskilling, socialising, while making beneficial use of resources that would otherwise be landfill material. Skills learnt at these units may provide an opening to further opportunities for youth, unemployed or recently released from prison. Microenterprise units could incorporate some cultural components, for example art, carving, as could the community garden or biodiversity area of the proposed Reconnect Hub vision at Pines RRP.

All options to meet forecast demand that provide improvements environmentally and socially and that are economically viable would be worth pursuing, and should be prioritised according to those with the greatest benefit across environmental, economic, social and cultural outcomes. There is no expectation that any future forecast change or option to meet demand would result in any reduction in environmental, economic, social or cultural value.

6 Statement of Proposals

The preferred options outlined in Section 5 have been assessed against a number of criteria including their suitability to meet forecast demand, the protection of public health and the promotion of effective and efficient waste management and minimisation. All preferred options contribute one or all of these outcomes either directly or indirectly, and will be addressed in the WMMP. Council's intended role(s) in meeting the forecast demands is clearly identified in Table 5-4.

6.1 Protection of Public Health

The Council, together with providers from the private sector, currently supply a range of waste and diverted material services to the District that ensure that public health is adequately protected. The existing Council-provided solid waste services will continue.

The Health Act 1956 requires the Council to ensure solid waste collection is available for residents and that the closed landfills are managed in a way that reduces any potential environmental impacts. The Council's LTP provides for the provision of waste management and minimisation services and these contribute to a healthy environment.

The methodology used to assess future options has been based on ensuring minimal harmful effect to public health and promoting effective waste management and minimisation.

The preferred option of phasing out refuse bag collections will allow further progress in this area. Also the intended expansion and extension of services to more remote areas (such as community waste days, or collection route extensions and increased drop-off points) will reduce burning and burying of waste.

It is considered that the proposals will adequately protect public health. A copy of this draft document has been provided to the Medical Officer of Health for comment and response.

6.2 Promotion of Effective and Efficient Waste Management and Minimisation

This Waste Assessment has investigated current and future quantities of waste and diverted material, services provided in the District, future demands for waste and diverted material services, options to meet these demands and the Council's role in meeting these demands.

It is considered that the process of identifying future demands and options to meet these demands has been robust, and that the Council's intended role in meeting these demands is appropriate in the context of the overall statutory planning framework for the Council and for promoting effective and efficient waste management and minimisation.

In summary, the preferred method is to maintain and expand existing tonnages while pursuing new or emerging infrastructure in order to minimise waste to landfill and maximise efficiencies in the waste management activities.

Therefore, it is considered that the proposal will promote effective and efficient waste management and minimisation.

Appendix A Copy of Medical Officer of Health Statement and Council Staff Comments

In accordance with the requirements of the WMA, the Council has consulted with the region's Medical Officer of Health by providing a draft copy of the Waste Assessment report for his review and comment. The Medical Officer's response is attached overleaf. The Council will consider these matters as part of its review of the WMMP.

Selwyn District Council Waste Assessment

The following is feedback provided by the Medical Officer of Health. Council staff have made notes relating to some of the feedback – all staff comments are in blue.

Medical Officer of Health Feedback

The Waste Minimisation Act 2008 requires that each Territorial Local Authority (TLA) must review its Waste Management and Minimisation Plan every 6 years. In doing so, it must make a waste assessment before conducting the review (s50 (2)). In making a waste assessment the TLA must consult the Medical Officer of Health (s51(5)(a)).

A waste assessment must contain, amongst other things (s1(f)(i)) a statement about the extent to which the proposals contained in it will ensure that public health is adequately protected:

The following feedback is provided on the Draft Waste Assessment prepared by the Selwyn District Council.

Executive Summary

The comments from the Medical Officer of Health are summarised under the following categories;

- Waste Data Collection and Analysis
- Kerbside Refuse, Recycling and Organics collection
- Drop off Refuse, Recycling and Organics and Construction Waste
- High Country Village Residual Waste and Recycling Collection
- Refuse Transfer Stations
- E-Waste Collection and Disposal
- Hazardous Wastes
- Landfill and Closed Landfills
- Cleanfill
- Organics Diversion
- Community and Industry Engagement
- Further Assessment Options and Issues

Given the sparsely populated character of much of the Selwyn District, there are a number of recommendations that acknowledge the large distances and large volumes of material that are generated through rural activities. The Selwyn District Council is largely commended for a thorough Waste Assessment, however there are some specific recommendations for improvement including;

- Waste Data Collection and Analysis
- Kerbside Refuse, Recycling and Organics collection
- Drop off Refuse, Recycling and Organics and Construction Waste
- Community and Industry Engagement
- Further Assessment Options and Issues

Public Health Issues

The main issues for public health with regard to waste management and waste minimisation are:

- Identification of the various types of wastes and collection/disposal methods
- Satisfactory collection and disposal of waste so that public health risks are controlled and mitigated
- Addressing the particular issues of hazardous waste, including medical wastes, asbestos waste and electronic waste (e-waste)
- Consideration of future population demands and consumption rates on the current system and mitigation strategies in place
- Regional co-ordination of waste management and waste minimisation
- Ensuring that a waste disposal service is available to all residents/ratepayers
- Legislative and cost barriers that inhibit mitigation of public health issues related to waste
- The health impacts of climate change and the contribution that effective waste management and waste minimisation can make to reduction in greenhouse gas emissions

1. Waste Data Collection and Analysis

The report highlights gaps in data knowledge particularly for qualities of waste, recyclable and hazardous materials. It is encouraging to see that Selwyn District Council is seeking to address this through the Offensive Trade Licence requirements.

The report also highlights that public waste and recycling take out of the district (the example of Prebbleton residents using the Christchurch City Council's Parkhouse Road facility is a valid observation of data that would be difficult to ascertain. Qualitative Research such as survey's and questionnaires may be a method through which some of this data could be obtained.

Data collection and analysis regarding the waste disposed of through Selwyn District Council services are relatively sparse. The Medical Officer of Health is not aware of any other documents other than the Waste Management Plan from 2011 as there is limited mention of it in the 2015-2045 Infrastructure Strategy and only a brief chapter in the Long Term Plan 2015-2015 making reference[1]. Regular standardised data collection and analysis are essential to needs assessment and planning for waste management and waste minimisation. Without it, Council will be limited in its ability to monitor the effectiveness of strategies to reduce specific components of the waste stream, for example diversion of green waste and putrescible material from landfill. Whilst strategies have been implemented to help increase the total material being diverted from landfill, the Medical Officer of Health is of the view that more could be done to help inform the public of this and help educate residents about solid waste reduction[2].

[1] Council Solid Waste staff collect and analyse tonnage data on a monthly basis. Detailed analysis of data forms part of the Solid Waste Activity Management Plan (AMP), which is to be read in conjunction with the Selwyn District Council Long Term Plan 2018-2028. The AMP is considered a "working document" and is reviewed and updated as appropriate at least every three years.

[2] Council staff agree with the Medical Officer of Health's view that more could be done to help educate residents about solid waste reduction and this forms part of the Action Plan in the Waste Management and Minimisation Plan.

Council has the opportunity of review of its Solid Waste Bylaw to make provision for better data management and waste monitoring.

- *The Medical Officer of Health recommends that Council plan to undertake regular (a minimum of triennially) standardised data collection and analysis of the composition of the waste stream disposed to landfill in the Selwyn District.*

- *Similarly, regular measurements of the types and volumes of waste transported outside the district for disposal should be carried out.*

- *Part of both the above recommendations could be advanced by the current review of the Council's Solid Waste Bylaw and Offensive Trades License requirements.*

2. Kerbside Refuse, Recycling and Organics collection

Figure 2.2 illustrates the Kerbside Collection Quantities of Residual Waste and Diverted Material shows a drastic increase in the level of material diverted from landfill from 26% in 2006/2007 to 48% in 2015/2016. This is a significant improvement especially considering the population growth and overall increase in total kerbside collections. The reasoning given for this improvement is attributed mainly to the implementation of 240 litre recycling bins to households and significant uptake of organics primarily in urban and peri-urban areas.

Table 2.5 provides a good analysis of the composition of kerbside residual waste from an analysis project undertaken in 2014. This figure demonstrates there is still a significant amount of waste that can potentially be diverted - this is acknowledged by Council. Figure 2.5 shows that approximately 64% of current kerbside waste collection can diverted via the recycling and organics services.

Given the growth in and around a number of townships within the district, Council should consider on a case-by-case basis extending the kerbside collection particularly in areas on the peri-urban fringe of townships[3]. This would improve the efficiency of refuse, recycling and organics collections, help achieve diversion of recyclable materials and organic waste from landfills and allow for more residents to access the kerbside collection service.

[3] Council staff already consider on a case-by-case basis extending the kerbside collection route and have done for some time. This is mentioned in Section 2.4.1 of the Waste Assessment 2017.

Drop off Refuse, Recycling and Organics and Construction Waste

The Assessment highlights the differences between kerbside refuse, recycling and organics collection and drop-off refuse, recycling and organics – the bulk of which is dropped directly to the Pines Resource Recovery Park. Figure 2.6 shows that the composition of recycling materials has remained steady whilst the overall quantity has increased; this may change as more items are diverted away from landfill and Council needs to ensure that there is capacity at Pines to process the increase in recyclable materials. It is good to see that on Page 15 that Council acknowledges the importance of Pines RRP for Public Drop-off Recyclables for items that are not compatible with kerbside services including cardboard and scrap metal. Council could also consider the use of organic waste for electricity generation or reuse into fertiliser or compost materials[4].

It is good to see that potentially divertible materials from residential construction sites have been identified. Council will need to carefully consider how to achieve this as the vast bulk of sites will be privately managed with many organisations with different approaches to waste. It would of value to integrate this with the Combined Health and Environment Group (CHER) of which both Selwyn District Council and the Canterbury District Health Board are members to implement education campaigns around waste management and minimisation from economic (reduced disposal costs for business), environmental (reduced risk of contamination) and health (reduced risk of exposure to contaminated air, soil or water) perspectives.

[4] All organic waste (kerbside and drop-off) is composted at the Pines Resource Recovery Park.

High Country Village Residual Waste and Recycling Collection

Residual Waste and Recycling collection from smaller communities with in the Selwyn District is managed in some capacity at Castle Hill, Arthurs Pass and Lake Coleridge through container and trailer stations. This provides a practical solution for townships that in terms of capacity, distance and type of waste generation aren't feasible for kerbside collection.

Council should consider expanding this model to some other smaller townships to assist in the diversion of recyclables and organics where kerbside collection and private collection are not feasible[5]. This could also be used to compliment the strategies for fly-tipping in remote areas and public litter bins in areas where access is limited.

[5] The recycling and refuse station concept currently in use in Arthur's Pass is planned to be expanded to other areas for this reason. This is included in the Action Plan in the Waste Management and Minimisation Plan. All townships are serviced, however there are rural properties between townships where improvements could be made.

Council is commended for implementing differing methods for the disposal of residual waste, recycling and organics for areas across the district that have different waste, recycling and organic disposal needs. This method allows for improved management and minimisation of waste from areas that otherwise may not have been able to for practical reasons been able to dispose of materials through economical and environmentally responsible methods.

3. Refuse Transfer Stations

The Pines Resource Recovery Park is the Selwyn District Council's only permanent waste handling facility. The facility consists of a waste receiving area, a waste compactor, composting area a weighbridge kiosk, a recyclable material acceptance area, shipping containers for storage of electronic waste, hazardous and flammable wastes and agricultural and chemical containers. The residual waste is transferred to the regional Kate Valley Landfill. Recyclable materials are stored and then transported to EcoCentral Ltd for processing.

- Satellite RRP Service
  - It is good to see initiatives such as this for areas that are considerable distance from the Pines RRP that may not be able to easily access these facilities. Initiatives such as these help to divert materials that may have otherwise be disposed of illegally or burnt.

It is good to see Figure 3.4 outlining a draft/proposed Redevelopment of the Pines Resource Recovery Park. The Medical Officer of Health would like to see planning for this in the Councils next Long Term and Annual Plans for funds to be allocated to this proposed development[6]. It is also noted that parts of the site particularly organics are acknowledged to be over capacity.

[6] Funding for the Reconnect Project is included in the Selwyn District Council Long Term Plan 2018-2028

4. E-Waste Collection and Disposal

The Medical Officer of Health acknowledges the work that has been done in this area to help encourage residents of the Selwyn District to utilise the E-Waste recovery. The fully subsidised E-Waste disposal is an effective method for diversion of these materials away from landfill.

5. Hazardous Wastes

The assessment outlines that there is some knowledge of the types or quantities of hazardous waste in the district – however there is also acknowledged that there is a gap in knowledge regarding hazardous materials that are collected by private contractors and also material that is potentially disposed of illegally. Without robust information, it is difficult to plan for the future or assess the performance of existing or suggested strategies for waste minimisation.

- *It is acknowledged that Council is attempting to connect the Offensive Trade Licensing with Hazardous Waste Disposal. In addition to this Council is encouraged to explore local options for hazardous waste management, in collaboration with other Canterbury councils through the Canterbury Joint-Waste Committee.*

- *Council should implement more frequent monitoring of hazardous waste disposal, both types and volumes, at the Pines RRP transfer station[7].*

[7] All hazardous waste incoming and outgoing from the Pines Resource Recovery Park is monitored. Gaps in data is historical, or where hazardous wastes (and other waste streams) are collected by private contractors. This is expected to be addressed through licensing of collectors in the District.

6. Landfill and Closed Landfills

The Selwyn District contains a number of old landfills that were in operation prior to the opening of the Kate Valley Regional Landfill. Council has identified the known closed landfills as;

- Arthurs Pass
- Springfield (Cox's Pit)
- Darfield (Hawkins Pit)
- Hororata
- Killinchy
- Springston (Luggs Pit)

The assessment notes that these sites are routinely monitored for groundwater quality. The Medical Officer of Health endorses this approach as many historic landfills were not constructed and maintained in a way that would be considered suitable by environmental standards in 2017. It is responsible for Council to continue this as it is likely that some of these disused sites are potentially leaching contaminants that are harmful to both the physical environment and human health. It is understood that there are currently no operational landfills within the Selwyn District with all residual waste being transported to Kate Valley Regional Landfill for disposal.

It is good see that Council acknowledges that there are many historic 'town dumps' that are not on record due to either the age of the dumps or the lack of historical information regarding their locations. It is understood that Council in conjunction with Environment Canterbury around the Listed Land Use Register has identified from the information currently available, old landfill sites within the Selwyn District. It would be worth Council considering integration between LLUR/HAIL activity consents and disposal of contaminated material to landfill.

The National Environmental Standard for Assessing and Protection Human Health from Contaminants in Soil (NESCS) and the proposed National Environmental Standard for the Outdoor Storage of Tyres (NESOST), highlight historical poor management of waste and inadequate disposal of contaminated materials. With the proposed NESOST being developed Council need to be aware that there may be in increase in the amount of end-of-life tyres being disposed of at the Pines RRP and potentially disposal of illegally on individual sites. Council, through the Canterbury Joint Waste Committee could consider a region wide approach to managing and increase in the volume of tyres being disposed of.

- *Integration between LLUR/HAIL subdivision consents and disposal to landfill. This would provide additional data regarding disposal of hazardous materials from within the district.*
- *Integration through the Canterbury Joint Waste Committee regarding the management and disposal of end-of-life tyres.*

7. Cleanfill

The assessment gives the options of retaining the status quo and Council using the provisions of the District Plan to control these activities. The options of Council provision of cleanfill sites and an audit of existing sites are also given. Construction and demolition wastes a significant proportion of waste to landfill in the district there is undoubted scope for further diversion of at least some of these wastes to cleanfill sites as well as recycling

- *Council is encouraged to audit existing cleanfill sites and to explore the possibility of co-ordinated Canterbury Regional provision and monitoring of cleanfill sites. This need not mean that such sites are necessarily provided by Councils and there may be business opportunities for reuse and recycling of some of these materials.*

8. Organics Diversion

The assessment outlines that at the time of writing the assessment that the Pines RRP compost plant is currently operating over capacity and that this has forced a review of the processing method. There are many options available to Council including

- Collaboration with other Councils
- Encouragement of composting
- Development of a Composting Facility for resale of composted materials (it is good to see mention of this in Table 5.2.2 – Disposal and Diversion Infrastructure)

- *Council is strongly encouraged to actively explore a range of options for the diversion of organic waste, including the possibility of collaborative approaches with other Canterbury Councils[8].*

[8] This has been underway for some time.

9. Community and Industry Engagement

Effective waste minimisation in the Selwyn District will require the engagement of industry and the wider community. The patterns of consumption and waste generation that New Zealanders currently enjoy are unsustainable both locally and globally. There are adverse environmental, economic and health effects from our current practice and potential benefit in all these spheres from effective action.

Industry and Community production and consumption choices have significant influence on the type and quantity of waste produced. It is acknowledged that Council has limited ability to control waste being generated and that the approach to waste management and minimisation is a collaboration between government, industry and the wider community.

Engagement with industry and industry best practice waste reduction principles, have the potential to reduce the overall level of waste being generated particularly around construction and demolition waste. There is significant scope for the implementation of on-site waste, recycling and organic waste stream management, categorisation and separate disposal to further divert materials to landfill.

It is good to see collaboration with industry and community schemes including AgRecovery – which help to divert materials, particularly hazardous materials away from landfill.

- *The Medical Officer of Health strongly supports the need for community engagement in effective waste minimisation and encourages Council to emphasise not only the environmental and economic benefits of waste minimisation but also the wider health benefits[9].*

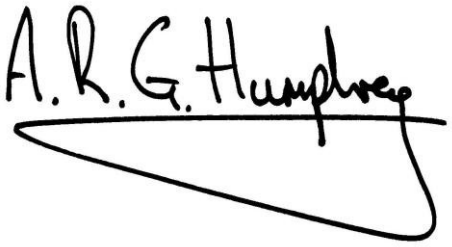
[9] Council staff agree. This forms part of the Action Plan in the Waste Management and Minimisation Plan.

10. Further Assessment Options and Issues

It is good to see that Council has conducted a robust analysis of issues and methods for addressing these issues in Table 5.4 through assessment criteria including;

- Preferred Options
- Waste Hierarchy
- Funding Mechanism
- Timeframe
- Council Role
- Public Health Benefits
- Reporting

The Medical Officer of Health recommends that the funding mechanism and council role categories be expanded to included funding figures from Long Term Plans and Annual plan references and associated budgets for the 'Funding Mechanism' category, and in addition the legislative references where appropriate for the Councils roles including under the Waste Management and Minimisation Act (2008), the Local Government Act (2002), the Health Act (1956) and the Resource Management Act (1991).



Dr Alistair Humphrey MPH FAFPHM
Medical Officer of Health, Canterbury
Community and Public Health

7th September 2017

Appendix B - Waste Management and Minimisation Bylaw 2012

WASTE MANAGEMENT AND MINIMISATION BYLAW 2012

SELWYN DISTRICT COUNCIL

WASTE MANAGEMENT AND MINIMISATION BYLAW 2012

This Selwyn District Council Waste Management and Minimisation Bylaw 2012 (Bylaw) is made pursuant to sections 145 and 146 of the Local Government Act 2002, section 56 of the Waste Minimisation Act 2008, sections 64 and 65 of the Health Act 1956, and section 12 of the Litter Act 1979.

Contents

Schedules

1 General

1.1 Title

The title of this Bylaw shall be the "Selwyn District Council Waste Management and Minimisation Bylaw 2012".

1.2 Commencement

This Bylaw shall come into force on the 1 December 2012 (the start date).

1.3 Purpose

The purpose of this Bylaw is to:

a) Protect, promote and maintain public health and safety, and the health and safety of Waste and Diverted Material operators by regulating the collection and disposal of Waste and Diverted Material;

b) Promote effective, efficient and safe collection, transportation, management, storage and disposal of Waste and Diverted Material;

c) Regulate and monitor Waste and Diverted Material Operators within the District through a licensing process; and

d) Promote waste minimisation through any other activity.

1.4 Repeal

This Bylaw revokes the Ellesmere County Council General Bylaw 1969, Part X: Removal of Refuse, Malvern County Council General Bylaw 1987, Chapter 6; Removal of Refuse and the Paparua County Council Bylaw 1981, Section 2: Household Refuse Collection and Disposal.

2 Interpretation

In this Bylaw, unless the context requires otherwise, the following definitions apply:

Approved	means authorised in writing by the Council.
Approved Collection Bag	means a bag Approved for the use in the Kerbside Collection Service for Approved Waste.
Approved Collection Container	means a collection container, including a bag, Approved for use in a Kerbside Collection Service.
Approved Diverted Material	has the meaning given in Schedule 2.
Approved Organic Material	has the meaning given in Schedule 2.
Approved Waste	has the meaning given in Schedule 2.

Council	means the Selwyn District Council, or any committee, Community Board, or officer delegated to exercise the authority of the Council.
District	means the Selwyn District.
Diverted Material	means anything that is no longer required for its original purpose and, but for commercial or other waste minimisation activities, would be disposed of or discarded.
Drop-off Point	means an area provided by Council for the purpose of depositing Approved Waste, Approved Diverted Material or both.
Eligible Property	means a property within the District that is on the collection route of any of the Kerbside Collection Services.
Hazardous Waste	has the meaning given in Schedule 2.
Kerbside Collection Service	means any collection service provided by or on behalf of the Council for the collection of any Approved Waste or Diverted Material from Eligible Properties within the District.
Licence	means a licence issued in accordance with this Bylaw.
Licensed Collector	means a person who holds a current Licence to collect, transport and deposit Waste and/or Diverted material.
Litter	means any refuse, rubbish, animal remains, building materials, glass, metal, garbage, debris, dirt, filth, rubble, ballast, stones, earth, or waste matter, or any other thing of a like nature.
Nuisance	has the meaning given in section 29 of the Health Act 1956 and includes anything obnoxious, offensive or injurious to the community or any member of it.
Occupier	means any person or company who occupies any land or building (including commercial premises) and, if the land or building is unoccupied, includes the owner or the owner's agent**.**
Owner	is the person or company whose name is on the certificate of title for the premises.
Person	includes a corporation sole, and also a body of persons, whether corporate or unincorporated.
Property	means land or buildings which are separately occupied.
Public Place	means (a) A place that is under control of the Council and that is open to, or being used by, the public (whether or not there is charge for admission); and (b) Includes a road (whether under the control of Council or otherwise) and any part of a public place.

Waste	means (a) Anything disposed of or discarded; and (b) Includes a type of waste that is defined by its composition or source (for example, organic waste, electronic waste, or construction and demolition waste); and (c) To avoid doubt, includes any component or element of diverted material, if the component or element is disposed of or discarded; and (d) Litter.
Waste and Diverted Material Facility	means any land and associated improvements used for the handling, storage, processing and/or disposal of Waste, Diverted Material or both by, or on behalf of the Council, and includes, but is not limited to, resource recovery parks, landfills and Drop-Off Points.

3 Introduction

3.1 Overview

3.1.1 This bylaw provides rules that apply to the Council's Waste and Diverted Material services, and certain other activities, which without regulation have the potential to threaten public health and safety and create a nuisance.

3.1.2 All users of the Council's Approved Waste and Approved Diverted Material Services shall pay all fees and charges as specified by the Council.

3.1.3 Fees and charges for the Council's Waste and Diverted Material services may be amended by the Council following the procedures in the Local Government Act 2002 for setting fees and charges.

3.1.4 Current fees and charges will be posted on the Selwyn District Council Website (http:// www.selwyn.govt.nz) and may be obtained at the Council's office and service centres.

3.1.5 Information about the Council's Waste and Diverted Material services is posted on the Selwyn District Council Website (http://www.selwyn.govt.nz) and may be obtained at the Council's office and service centres. This information includes the operative Waste Management and Minimisation Plan and the operative Long Term Plan.

3.1.6 This Bylaw includes the following Schedules:

(a) Schedule 1 – Approved Collection Containers. This records the current collection containers that are Approved for use by a participant in a Council Kerbside Collection Service. The Council may, from time to time, alter the categories and type of Approved Collection Containers by resolution publicly notified.

(b) Schedule 2– Classification of Waste and Diverted Material. This records classifications of Waste and Diverted Material including Approved Waste and Approved Diverted Material and Prohibited Waste within the District. The Council may, from time to time, alter the classification of Waste and Diverted Material as recorded in Schedule 2 by resolution publicly notified.

(c) Schedule 3 – Waste and Diverted Material Requiring a Licensed Collector. This sets out which materials require the Collector to be Licensed.

(d) Schedule 4 – Collection Times for Waste and Diverted Material. This sets out the times that Approved Collection Containers must be placed out for collection.

(e) Schedule 5 – Form of Application for a Licence. This sets out the form of the application for a Licence to become a Licensed Collector. The Council may vary this from time to time. The current application form will be posted on the Council's website.

4 Council Waste and Diverted Material Services

4.1 Kerbside Collection

Approved Waste

4.1.1 Only Approved Waste being Permitted Waste and Controlled Waste as defined in Schedule 2 shall be put out for collection by a Kerbside Collection Service for Waste.

Approved Diverted Material

4.1.2 Only Approved Diverted Material as defined in to Schedule 2 shall be put out for collection by a Kerbside Collection Service for Diverted Material.

Approved Collection Containers

4.1.3 Only Approved Collection Containers shall be used for Approved Waste in a Kerbside Collection Service for Waste.

4.1.4 Only an Approved Collection Container for the specified type of Approved Diverted Material shall be put out for use in a Kerbside Collection Service for that type of Diverted Material.

4.1.5 Approved Collection Containers allocated to Eligible Properties shall remain the property of the Council (or contractor) and shall remain at the Eligible Properties for use in the Kerbside Collection Service.

4.1.6 Subject to clause 4.1.7 where an Approved Collection Container is lost or damaged through negligence, misuse, abuse or alterations by the Owner or Occupier of the Eligible Property, the Owner will be liable for the cost of replacement or repair.

4.1.7 It is the responsibility of every Owner of an Eligible Property to provide an Approved Collection Container for Diverted Material to any Occupier of that property.

Use of Approved Collection Containers

4.1.8 An Approved Collection Container shall be placed at the kerbside for collection no earlier than the day before the collection day but no later than the time specified in Schedule 4.

4.1.9 An Approved Collection Container shall be removed from the kerbside within 24 hours of being collected by the Kerbside Collection Service or where the container has been labelled with a non-compliance notice in accordance with clause 4.1.18.

4.1.10 An Approved Collection Container shall not be filled so as to be overweight. The maximum authorised weights of Approved Collection Containers are specified in Schedule 1.

4.1.11 An Approved Collection Container shall be placed at the kerbside in such a manner so as to prevent spillage, with container lid fully closed or bag tied close...

4.1.12 An Approved Collection Container shall be filled in a manner that enables its contents to readily fall out of the container when being emptied by the Kerbside Collection Service vehicles.

4.1.13 An Approved Collection Container shall be placed at the kerbside in such a manner as to avoid any undue restriction of vehicle traffic or pedestrian flow.

4.1.14 An Approved Collection Container shall be placed at the kerbside no closer than 0.5m from an adjacent Approved Collection Container.

4.1.15 All Approved Collection Containers shall be cleaned regularly and as necessary by the Owner or Occupier of the Eligible Property so as to avoid a Nuisance.

4.1.16 No person, other than the Owner or Occupier of an Eligible Property, the Council or the Licensed Collector shall, without the Owner or Occupier's consent, interfere with, deposit

or remove any material from the Owner or Occupier's Approved Collection Container, once it has been placed at the kerbside for collection.

4.1.17 No person, other than the Owner or Occupier of an Eligible Property, the Council or the Licensed Collector, shall uplift, collect, remove or relocate the Owner or Occupier's Approved Collection Container that has been put out for collection, unless it poses an immediate health and safety risk.

Non-Compliance

4.1.18 Where an Owner or Occupier of an Eligible Property fails to comply with this Bylaw, including by:

(a) Putting out material for collection other than Approved Waste or Approved Diverted Material;

(b) Putting out for collection Waste or Diverted Material, whether Approved or otherwise, in a collection container or bag which is not Approved;

(c) Overfilling an Approved Collection Container or an Approved Collection Bag so that it is heavier than the authorised maximum weight;

(d) Filling an Approved Collection Container in such a way that the contents do not readily fall out,

the Council or the Approved Licensed Collector may decide not to collect the bag or empty material from the collection container.

4.2 Drop-Off Points for Waste and Diverted Material

4.2.1 Drop-off Points shall be used only in accordance with the Bylaw and such further instructions or conditions as the Council may determine as displayed on signs at the Drop-off Points.

4.2.2 Only Approved Waste and Approved Diverted Material as defined in Schedule 1 shall be deposited at a Drop-off Point.

4.2.3 A user of a Drop-off Point shall deposit Approved Waste in the Approved Collection Containers for Waste located at the Drop-off Point Where a Drop-off Point provides for Diverted Material, a user shall deposit Approved Diverted Material in the Approved Collection Containers for Diverted Material located at the Drop-off Point

4.2.4 A user of a Drop-off Point shall deposit Approved Waste and Approved Diverted Material at the Drop-off Point in such a manner as to prevent spillage and the depositing of Litter.

4.2.5 No person, other than the Council or the Approved Licensed Collector, shall uplift, collect, remove or relocate an Approved Collection Container or material that has been placed at a Drop-off Point for collection unless it poses an immediate health and safety risk.

4.3 Council Waste and Diverted Material Facilities

4.3.1 Any users of the Waste and Diverted Material Facilities shall comply with the Bylaw and any other conditions that the Council may determine, as displayed on signs at the facilities.

4.3.2 No person using a Waste and Diverted Material Facility shall:

a) Deposit or dispose of any Waste or Diverted Material at the facility which is not approved by the operator to be deposited or disposed at that facility;

b) Deposit or dispose of any type or class of Waste or Diverted Material at any location within the facility which has been marked off and designated for the depositing or disposal of a different type or class of Waste and/or Diverted Material; and

c) Deposit or dispose of any Waste or Diverted Material at the facility that does not comply with the acceptance criteria of that facility unless authorised to do so by the Council or operator of that facility.

4.3.3 No person shall:

a) Enter a Council Waste and Diverted Material Facility without authorisation from the Council or operator of that facility; or

b) Move or remove any Waste or Diverted Material or any other article or item found at a Waste and Diverted Material Facility without the express permission of the Council or operator of that facility.

4.4 Public Recycling Bins and Public Litter Bins

4.4.1 Only Approved Waste or Approved Diverted Material shall be placed into a public litter bin or public recycling bin.

4.4.2 Public recycling bins or public litter bins shall not be used by any Person for the disposal of any Waste or Diverted Material that is generated from residential, commercial or industrial premises which would ordinarily be put out for collection by either a Kerbside Collection Service or a non-Council collection service.

4.4.3 In respect to any public recycling bin or public litter bin no person shall:

a) Put or attempt to put any material into it if it is full.

b) Remove anything from it unless authorised to do so by the Council or unless it represents an immediate threat to the health and safety of any person.

c) Interfere with, damage or destroy any public recycling bin or public litter bin.

4.4.4 Where Litter generated by, or attributable to, any premises is likely to be carried into any Public Place, for example from a fast food outlet, or restaurant providing take away food or the like, the Council may direct the Occupier of the premises to :

(a) Take reasonable steps, to the satisfaction of the Council, on those premises, to prevent Litter being carried, or escaping on to the Public Place;

(b) Take reasonable steps immediately adjacent to the premises to prevent Litter from the premises escaping onto the Public Place which may include (without limitation):

(i) Removing excess Waste or Litter and Diverted Material from public litter bins or public recycling bins, or receptacles provided by the Occupier of the premise, so as to avoid such Litter, Waste or Diverted Material escaping onto the Public Place;

(ii) Removing any excess Waste, Litter or Diverted Material which has already escaped onto the Public Place, from around the public litter bins or public recycling bins or receptacles.

4.4.5 Where any Litter generated or attributable to any premises contemplated in 4.4.4 is excessive the Council may direct the Occupier of the premises to:

(a) Provide and maintain sufficient receptacles for Litter, to a suitable design and construction, to the satisfaction of the Council, on the Public Place adjacent to the premises;
(b) Manage and maintain such Litter receptacles in a way which prevents Litter from escaping onto the Public Place.

4.4.6 Any direction given by Council under 4.4.4 or 4.4.5 must be given by notice in writing personally delivered to the Occupier or sent by post addressed to the Occupier's place of business and the Occupier must comply with the direction within the time frame specified by the Council.

5 Licensing of Waste and Diverted Material Collectors

5.1 Any person involved in the removal, collection or transportation of more than thirty (30) tonnes of Approved Waste or Diverted Material listed in Schedule 3 in any one twelve (12) month period within the District shall hold a Licence to do so issued by the Council.

Applications for Licences

5.2 Every application for a Licence must:

- Be made in the prescribed form as set out in Schedule 5 and as updated by the Council from time to time; and
- Describe the activities in respect of which the Licence is sought; and
- Be accompanied by the application and processing fee; and
- Include such further supporting information as the Council may require for processing of the application.

5.3 A Licence may be granted at the discretion of the Council, upon and subject to such terms and conditions as the Council considers appropriate taking into account, but not being limited to, the matters listed in section 5.4.

Granting a Licence:

5.4 When exercising its discretion to grant a Licence and considering the conditions to be imposed under it, the Council may take into account such matters as have bearing on the decision to grant a Licence to that applicant including but not limited to the following:

- The extent to which the licensed activities will promote public health and safety and assist the Council achieve the objectives of the Council's operative Waste Management and Minimisation Plan;
- The quantity and type of Waste or Diverted Material to be removed, collected, transported, treated or disposed;
- The methods employed for the removal, collection, transportation, storage, treatment or disposal of Waste or Diverted Material including the identity of the Waste and Diverted Material Facility at which it is proposed that treatment or disposal will occur;
- The frequency and location of the Waste or Diverted Material collection, removal, transportation services;
- The specifications of the vehicles, equipment and containers to be used for the collection, removal, transportation, treatment or disposal of Waste or Diverted Material;

- The applicant's experience, reputation and track record in the Waste and Diverted Material industry, including any known past operational issues which may affect the applicant's performance, and any breaches of previous licence conditions;
- The applicant's financial position; and
- The terms and conditions under which such disposal of Waste or Diverted Material is permitted and the existence of or need for any statutory approvals, authorisations or consents required to be held or complied with in respect of such disposal.

Licence Conditions

5.5 The Council may impose such terms and conditions on a Licence as it determines.

5.6 A licenced collector shall comply with all terms and conditions of the licence.

5.7 The Council may suspend or revoke a Licence if the Licence holder fails to comply with this Bylaw, any of the terms and obligations of the Licence or acts in a manner which, in the opinion of the Council, renders the Licence holder unfit to hold such licence

6 Offences

6.1 Any person who breaches any provision of these bylaws commits an offence under s239 Local Government Act 2002 and s66 of the Waste Minimisation Act 2008.

6. 2 A person found guilty of an offence by summary conviction under s239 of the Local Government Act 2002 or s 66 of the Waste Minimisation Act 2008 is liable to a fine of up to $20,000.

Schedules

Schedule 1– Council Approved Collection Containers

Schedule 2– Classification of Waste and Diverted Material

Schedule 3 – Waste and Diverted Material Requiring a Licensed Collector

Schedule 4 – Collection Times for Approved Collection Containers

Schedule 5 – Form of Application for a Licence

Schedule 1 – Approved Collection Containers

Approved Collection Containers for Council Kerbside Collection Services

1. Approved Collection Bag for Waste

An Approved Collection Bag for waste is one that has a Council logo and can be purchased at local supermarkets, transfer stations and Council offices. Approved Collection Bags for Waste and maximum acceptable weights are:

Pre-purchased 60 litre bag	12kg

2. Approved Collection Containers for Waste (other than an Approved Collection Bag)

An Approved Collection Container for Waste is one that has a Council logo or both a Council logo and a Council-registered wheelie bin number. Approved Collection Containers for Diverted Material shall not be used as Approved Collection Containers for Waste. Approved Collection Containers for Waste and maximum acceptable weights are:

80 litre wheelie bin	30kg
240 litre wheelie bin	60kg

3. Approved Collection Containers for Diverted Material

An Approved Collection Container for Diverted Material is one that has a Council logo or both a Council logo and a Council-registered wheelie bin number. Approved Collection Containers for Diverted Material and maximum acceptable weights are:

Designated residential collections

Recyclables (wheelie bin with yellow lid):

240 litre wheelie bin	30kg
140 litre wheelie bin	30kg

Organic Material (wheelie bin with lime green lid):

240 litre wheelie bin	60kg

Designated rural collections

Recyclables:

60 litre crate	15kg

Advice about areas serviced by designated residential collection services and areas served by designated rural collection services may be obtained from the Council website or by contacting the Council offices.

Schedule 2 – Classification of Waste and Diverted Material

This Schedule is specific to Council's Kerbside Collection Services and Drop-off Point services.

Approved Waste and Prohibited Waste

Approved Waste is Permitted Waste and Controlled Waste

Permitted Waste

Permitted Waste is Waste that is not defined as Controlled Waste or Prohibited Waste.

Controlled Waste

Controlled Waste is:

- Broken glass, broken china, broken plastic, razor blade, knife, or any other material capable because of its shape or form of causing injury unless it is contained so as to prevent injury, damage or loss
- Any sharp object or material capable of puncturing the Approved Receptacle or material capable of being rendered so during collection, unless such material is properly and sufficiently contained so as to prevent injury, damage or loss
- Any putrescible waste, such as vegetable and meat kitchen scraps, unless it is contained so as to prevent nuisance or damage
- Any other material that may be determined as controlled by the Council.

Prohibited Waste

Prohibited Waste is:

- Any explosive material, flammable material, infectious material, radioactive material, corrosive material, oxidant, toxic material, or any other matter of any kind whatsoever that may endanger any person, animal or vehicle which may come into contact with the material at any time prior to, during or after disposal
- Liquids or containers containing liquids
- Hot ashes or other hot material
- Compressed-gas cylinders
- Asbestos containing materials. If you think that the material you are handling may contain asbestos please contact the Ministry of Business, Innovation and Employment. More information can be found on their website at http://www.dol.govt.nz.
- Hazardous waste which means containing substances defined in Section 2 of the Hazardous Substances and New Organisms Act 1996, which exceed the minimum degree of hazard specified by the Hazardous Substances (Classes 1 to 5 controls) Regulations 2001.

Schedule 2 - continued

Approved Diverted Material and Prohibited Diverted Material

Approved Diverted Material is Permitted Recyclables and Permitted Organic Waste

Permitted Recyclables

Kerbside Collection Containers:

- Plastics identified with recycling symbols and with a number 1-7. Washed, not squashed and lids off.
- Steel tins and aluminium cans (washed).
- Empty aerosol cans.
- Clean aluminium foil.
- Drinking glasses, glass bottles and jars. Washed with the lids off (the lids can also go in the recycling container).
- Clean paper and cardboard. For example office paper, magazines, newspaper, egg cartons, cereal boxes, envelopes.

Pines Resource Recovery Park:

- Whiteware and scarp metal
- Plastics with recycle numbers 1, 2 and 4. Washed, not squashed and lids off.
- Steel tins and aluminium cans (washed).
- Empty aerosol cans.
- Aluminium
- Polystyrene.
- Paint
- Clothing
- Yoghurt and milk cartons
- Drinking glasses, glass bottles and jars. Washed with the lids off (the lids can also go in the kerbside recycling containers).
- Clean paper and cardboard. For example office paper, magazines, newspaper, egg cartons, cereal boxes, envelopes.
- E-scrap. The Recovery Park will accept anything that is electronic or electrical waste (this is termed E-scrap). There is a charge to recycle old style TVs and computer monitors (Cathode Ray Tube – CRTs) and flat screen TVs and computer monitors.

Prohibited Recyclables

- Plastic wrap (e.g. Glad Wrap).
- Pesticides, oil or hazardous chemicals.
- Ceramics, crockery, porcelain and oven ware.
- Mirrors, window glass or broken glass.
- Light bulbs.
- Bubble wrap.
- Hot ashes.
- Polystyrene.
- Materials contaminated with food.

Please refer to the Council website for a comprehensive list of what can and cannot be recycled in the kerbside collection containers or at the Pines Resource Recovery Park.

Schedule 2 - continued

Approved Diverted Material and Prohibited Diverted Material

Permitted Organic Material:

- Food scraps.
- Other putrescible waste, such as vegetable and meat kitchen scraps, unless it causes nuisance.
- Garden waste, such as lawn clippings, hedge trimmings, etc.

Prohibited Organic Material:

- Sawdust.
- Soil.
- Stones and gravel.
- Flax and bamboo.
- Animal waste.
- Ash.
- Leather items.
- Clothing or fabric.
- Nappies.
- Any organic material contaminated with chemicals known to compromise the quality of compost (e.g. Imidacloprid).

Schedule 3 – Waste and Diverted Material Requiring a Licensed Collector

A collector is required to hold a Licence for the collection of the following Diverted Material:

- Glass,
- Plastic,
- Steel,
- Aluminium,
- Paper,
- Cardboard,
- Organic material.

Schedule 4 – Collection Times for Waste and Diverted Material

Approved Collection Containers must be put out for collection on the applicable collection day no later than the following times:

- Eligible Properties on State Highway 1 7.00am
- All other Eligible Properties 7.30am

Schedule 5 – Form of Application for a Licence

Application for Licence
Pursuant to Selwyn District Council Waste Management and Minimisation Bylaw 2012

Selwyn District Council
PO Box 90
Rolleston 7643
GST No 53 113 451

Phone 03 347 2800
Fax 03 347 2799
www.selwyn.govt.nz

Company name	
Contact person:	
Mailing address:	
Phone:	Email:

What are you intending to collect? (circle which applies below)

Approved Waste	Approved Diverted Material	NA
Other (please specify materials):		

Where and when do you intend to provide this service?

(Please supply a list of locations, frequency and collection day. A map may be helpful in identifying the area/s being serviced).

Describe the containers you intend using: *(Size, capacity, materials, security)*
Describe how your containers will be clearly identifiable: *(Please provide evidence that the containers are clearly different from others being used, including Council's service)*

Describe the vehicles and equipment you intend using and how they will be branded: *(Vehicles and equipment need to be fit for purpose)*
Describe the activities of your service, list the acceptance criteria and material quality control measures including the sources and final destinations of materials you will handle

Briefly describe your experience in offering the services for which this application is being made:	
How will you send your waste and diverted material information to Council? (Please tick)	
By filling in the spreadsheet as per Schedule 6	
By letting weighbridge operators at Transfer Stations and Recovery Parks provide electronic information to Council	
If you have ticked the option for weighbridge operators to provide electronic data to Council to you give your permission for this to happen?	
How will your customers contact you?	
Phone	Email
Other (please specify)	
Fee (Non-refundable)	
Licence Application Fee (Five Years)	$125.00
Signature of applicant	Date