Notice is hereby given that an Extraordinary Meeting of Southland District Council will be held on:

Date:	**Wednesday, 8 July 2020**
Time:	**9am**
Meeting Room:	**Council Chamber**
Venue:	**15 Forth Street** **Invercargill**

Extraordinary Council Agenda
OPEN

MEMBERSHIP

Mayor	Mayor Gary Tong
Deputy Mayor	Ebel Kremer
Councillors	Don Byars
	John Douglas
	Paul Duffy
	Bruce Ford
	Darren Frazer
	George Harpur
	Julie Keast
	Christine Menzies
	Karyn Owen
	Margie Ruddenklau
	Rob Scott

IN ATTENDANCE

Chief Executive	Steve Ruru
Committee Advisor	Alyson Hamilton

Contact Telephone: 0800 732 732
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Website: www.southlanddc.govt.nz

Full agendas are available on Council's Website
www.southlanddc.govt.nz

Note: The reports contained within this agenda are for consideration and should not be construed as Council policy unless and until adopted. Should Members require further information relating to any reports, please contact the relevant manager, Chairperson or Deputy Chairperson.

TABLE OF CONTENTS

1 Apologies

At the close of the agenda no apologies had been received.

2 Leave of absence

At the close of the agenda no requests for leave of absence had been received.

3 Conflict of Interest

Councillors are reminded of the need to be vigilant to stand aside from decision-making when a conflict arises between their role as a councillor and any private or other external interest they might have.

4 Public Forum

Notification to speak is required by 5pm at least two days before the meeting. Further information is available on www.southlanddc.govt.nz or phoning 0800 732 732.

5 Extraordinary/Urgent Items

To consider, and if thought fit, to pass a resolution to permit the Council to consider any further items which do not appear on the Agenda of this meeting and/or the meeting to be held with the public excluded.

Such resolution is required to be made pursuant to Section 46A(7) of the Local Government Official Information and Meetings Act 1987, and the Chairperson must advise:

(i) The reason why the item was not on the Agenda, and

(ii) The reason why the discussion of this item cannot be delayed until a subsequent meeting.

Section 46A(7A) of the Local Government Official Information and Meetings Act 1987 (as amended) states:

"Where an item is not on the agenda for a meeting,-

(a) that item may be discussed at that meeting if-

  (i) that item is a minor matter relating to the general business of the local authority; and

  (ii) the presiding member explains at the beginning of the meeting, at a time when it is open to the public, that the item will be discussed at the meeting; but

(b) no resolution, decision or recommendation may be made in respect of that item except to refer that item to a subsequent meeting of the local authority for further discussion."

WasteNet Southland Waste Assessment and Waste Management and Minimisation Plan

Record No: R/20/6/24229
Author: Ian Evans, Strategic Manager Water and Waste
Approved by: Matt Russell, Group Manager Services and Assets

☒ Decision ☐ Recommendation ☐ Information

Purpose

1 To update Council on the progress to date regarding the review and update of the WasteNet Southland Waste Management and Minimisation Plan.

Executive Summary

2 Territorial Authorities (TAs) are required to have a Waste Management and Minimisation Plan as per the Waste Minimisation Act 2008. The WasteNet councils jointly prepared and adopted the Southland Waste Management and Minimisation Plan (the Waste Plan) in 2012.

3 The Act requires TAs to review their plans every 6-years. In 2018, WasteNet started reviewing the Waste Plan. In 2019, the review was placed on hold during the procurement of Recyclables Acceptance Services. In January 2020, the project recommenced with the Committee engaging Morrison Low to assist with the review of the Waste Plan.

4 The first stage involved a review of the Regional Southland Waste Assessment. This involves an in-depth assessment of waste generated and discarded including source, volumes and composition. The intention of this assessment is to determine the need or otherwise to undertake a review of the Waste Minimisation Plan, or to revoke the plan and develop a new one.

5 Outcomes from the assessment concluded that the principals of the 2012 Waste Plan are still of relevance and that it should be amended to reflect the updated assessment rather than require significant amendment.

Recommendation

That the Council:

a) Receives the report titled "WasteNet Southland Waste Assessment and Waste Management and Minimisation Plan" dated 1 July 2020.

b) Determines that this matter or decision be recognised not significant in terms of Section 76 of the Local Government Act 2002.

c) Determines that it has complied with the decision-making provisions of the Local Government Act 2002 to the extent necessary in relation to this decision; and in accordance with Section 79 of the act determines that it does not require further information, further assessment of options or further analysis of costs and benefits or advantages and disadvantages prior to making a decision on this matter.

d) Notes the resolutions of the Waste Advisory Group - those being:

That the Waste Advisory Group receive the report 'Waste Management and Minimisation Plan Review

AND THAT

The Waste Advisory Group adopts the Southland Waste Assessment 2020 subject to approval from the Medical Officer of Health

AND THAT

The Waste Advisory Group agrees to amend the Southland Waste Management and Minimisation Plan.

e) Adopts the Southland Region Waste Assessment subject to approval of the Medical Officer of Health.

f) Agrees to continue to review and amend the Southland Waste Management and Minimisation Plan.

Background

6 WasteNet Southland (WasteNet) is a shared service between the Gore District Council, Invercargill City Council and Southland District Council. WasteNet co-ordinates waste management and minimisation for the region including one waste plan, one landfill contract and one collection contract.

7 Territorial Authorities (TAs) are required to have a Waste Management and Minimisation Plan as per the Waste Minimisation Act 2008. The WasteNet councils jointly prepared and adopted the Southland Waste Management and Minimisation Plan (the Waste Plan) in 2012.

8 The Waste Minimisation Act requires TAs to review their plans every 6-years. In 2018, WasteNet started reviewing the Waste Plan. In 2019, the review was placed on hold during the procurement of Recyclables Acceptance Services. In January 2020, the project recommenced with the Committee engaging Morrison Low to assist with the review of the Waste Plan.

9 Under the Act it is a legal requirement for Authorities to have an up-to-date plan in order to be eligible to receive levy payments from the Ministry for the Environment. In April, the Ministry notified Council that the next round of levy payment would not be made until significant progress had been made in reviewing and updating the plan.

10 One key requirement in reviewing the Waste Plan is a completed Waste Assessment. The Waste Minimisation Act is prescriptive in what information must be included within the assessment including:

- a compilation and analysis of available data on the waste stream
- an inventory of existing waste management and minimisation services
- forecast future demand for services;
- a review of reasonably practicable options to meet the future needs; and
- a requirement to consult the Medical Officer of Health.

11 Through February to May, Council staff along with Morrison Low undertook a review and update of the Waste Assessment with the output from this helping to determine the degree of amendment required to the plan itself.

Issues for Consideration

12 In undertaking the Waste Assessment consideration was given to a number of factors from a global perspective through to a national and then regional/local level. These included:

- volatile global commodity market recyclables largely driven by 2018 China's National Sword Policy and the changing nature of other markets
- banning single use plastic bags
- resilience of NZ recycling system and limited ability for on-shore processing of recyclables.
- design of beverage container return scheme
- move towards development of a standardised collection service across New Zealand
- waste disposal levy increase from current $10 per tonne to proposed $50-$60 per tonne by 2023/24
- Emissions Trading Scheme cap
- move towards organic collection service across a number of metropolitan councils
- local glass issue and the need to find a sustainable cost effective solution.

Key Findings of the Updated Waste Assessment

13 A copy of the updated Waste Assessment is attached to this report as appendix 1. Key findings from the assessment include:

- almost 65,900 tonnes of material were discarded in the Southland region during the period 1 July 2018 to 30 June 2019. This figure was derived by combining the tonnage of diverted materials (18,000 tonnes) and solid waste to landfill (47,900 tonnes)

- diverted material accounts for 27% of materials discarded
- the tonnage equates to 676kg per person exceeding a target of 650kg per person, a target that has been met six times since 2006. It is noted that in certain years spikes can be attributed to a number of factors including significant demolition of the Mataura freezing works and the Bonaemia and Mycoplasma outbreaks
- the diversion target is still considered appropriate to drive waste minimisation within the region
- the demand for infrastructure to divert waste from landfill is anticipated to increase over the next ten years
- glass and fibre account for over 75% of all recycling at a regional level
- organics accounts for a significant (29%) of waste to landfill
- opportunities exist to build on current infrastructure and ongoing initiatives to help drive waste minimisation behaviours including education and behaviour change programmes, review of transfer station operations and review of recycling drop off points across the region.

14 The Waste Assessment was presented to the Waste Advisory Group (WAG) on 19 June 2020 and formally adopted at a subsequent meeting on 25 June 2020. Following advice from the Ministry the assessment is now presented to individual councils for adoption. Adoption of the Waste Assessment will enable payment of the July levy payment and will enable the plan itself to be updated.

15 It is noted that the Waste Assessment requires the approval of the Southland Medical Officer for Health with the recommendations of the WAG worded to reflect that. The District Health Board have been supplied with a copy of the assessment with preliminary discussion indicating that it meets their requirements. A meeting will be scheduled with the appropriate staff in early July where it is anticipated that approval will be forthcoming.

16 In undertaking the Waste Assessment Council staff and Morrison Low identified that the intent of the 2012 Waste Management and Minimisation Plan were still very relevant and recommend that the new plan should only require minor amendment to reflect the 2020 Waste Assessment with actions updated to reflect achievements and prioritised to reflect current drivers.

17 Resolutions from the WAG meeting are presented below:

Recommendations

That the Waste Advisory Group receive the report 'Waste Management and Minimisation Plan Review

AND THAT

The Waste Advisory Group adopts the Southland Waste Assessment 2020 subject to approval from the Medical Officer of Health

AND THAT

The Waste Advisory Group agrees to amend the Southland Waste Management and Minimisation Plan.

18 When undertaking the Waste Assessment and the proposed review of the plan it has been noted of significant uncertainty across the waste sector as a whole. Some of the changes currently being discussed at a national level are likely to result in changes to the services councils currently provide. These include moves to phase out low grade plastics, standardisation of contracts and services provided.

19 The Waste Plan will have the flexibility to accommodate some of these expected amendments with councils then planning to introduce and deliver them through future Activity Management Plans and Long Term Plans. It is likely that significant consultation will be required to understand long term implications and community expectations.

Factors to Consider

Legal and Statutory Requirements

20 The Waste Minimisation Act 2008 (the Act) requires territorial authorities to review their Waste Management and Minimisation Plans every six years. Outcomes from the final Waste Management and Minimisation Plan will be incorporated in Council's Solid Waste Asset Management Plan, and implemented through the 2021-31 Long Term Plan.

Community Views

21 Given that the work undertaken to date is an assessment of the volume and composition of waste generated within the region it has not been considered necessary to take into account community views.

Costs and Funding

22 There is no financial impact to individual councils as a consequence of the proposal to move to a joint committee. WasteNet is entirely self-funded via a levy imposed on every tonne of waste entering the landfill site. Financial shortfalls are funded through WasteNet Southland reserves.

Policy Implications

23 When adopted, the Southland Waste Management and Minimisation Plan 2020 will succeed the current Southland Waste Management and Minimisation Plan December 2012.

Analysis

Options Considered

24 When considering the current report, Council has two options, to adopt the Waste Assessment or not adopt the assessment. Each are considered in the following section:

Analysis of Options

Option 1 – Adopt the Southland Region Waste Assessment

Advantages	*Disadvantages*
• allows continued review and amendment of the Waste Management and Minimisation Plan • will enable continuation of levy payments.	• none.

Option 2 – Do not adopt the Southland Region Waste Assessment

Advantages	*Disadvantages*
• none.	• Ministry will continue to withhold levy payments • Council will continue to be less able to demonstrate it is unable to fulfil waste minimisation obligations.

Assessment of Significance

25 The decision to adopt the Southland Region Waste Assessment is not considered significant under Section 76 of the Local Government Act 2002.

Recommended Option

26 It is recommended that Option 1 is adopted ie, that Council adopt the Southland Region Waste Assessment.

Next Steps

27 Through WasteNet Southland, Council will continue to work with Morrison Low and prepare the amendments to the Waste Management and Minimisation Plan. Further workshops and meetings will be scheduled to present proposed amendments to the Waste Advisory Group and will ultimately require adoption by individual councils.

Attachments

A 2020 Southland Waste Assessment ⇩

Southland Region Waste Assessment

June 2020

DOCUMENT STATUS

Version	Date	Status
1	12 June 2020	Final Draft

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Territorial authorities are legally required to conduct a Waste Assessment and have regard to it in the review and preparation of their Waste Management and Minimisation Plans (WMMP). Under the joint committee banner of WasteNet Southland, the three territorial authorities – Invercargill City Council, Southland District Council, and Gore District Council (the Councils) – prepared this Waste Assessment as prescribed in s51 of the Waste Minimisation Act 2008.

This Waste Assessment will inform the drafting of the Councils' WMMP. It compiles and analyses information on diverted and waste materials produced in the Southland region. Taking into account forecast future growth and demand for services to provide a forward planning framework that considers both public health protection issues, alongside the Councils' legal requirements to promote effective and efficient waste minimisation. This assessment also provides a summary review of the reasonably practicable options available in terms of how to meet future demand for services and achieve waste management and minimisation objectives.

This document was prepared in April 2020 using information gathered from a variety of sources including data managed by the Councils, the Regional reports on Composition of Solid Waste in Southland Region 2018, Waste Not Consulting, and Rethinking Rubbish and Recycling – Southland Region, Sunshine Yates Consulting. Best efforts were undertaken in drafting to achieve reasonable accuracy, although in some cases the data has been estimated or there are data gaps (which are noted where applicable).

This Waste Assessment has been reviewed by the Southland Medical Officer of Health to ensure that public health is adequately protected into the future. Their feedback is included in Appendix A.

Background

Southland is the southern-most part of New Zealand with a diverse geography of coastal areas, floodplains, farmland, forestry, rivers and mountain ranges. Its land area is 31,600 square kilometres and boasts a population of 99,200 at the time of the 2018 Census. The region has experienced population growth of around 1% over recent years.

WasteNet Southland Mission, Values, Objectives and Targets

Our Mission

To provide the coordinated delivery of solid waste services within Southland to achieve the region's vision **– waste is a resource.**

Our vision of the future

"The effective and efficient stewardship of waste as a resource with a residual value to protect our health and environment" is our vision for a region that treasures the environment that supports us now and into the future. Southland's vision is to become a region that is a minimum waste producer, with businesses and individuals maximising opportunities to reduce, reuse, recycle and recover our resources. This will require radical changes in our behaviour over the next decade.

Goals

Three goals underpin this vision:

- Work together to improve the efficient use of resources
- Use the waste hierarchy to guide decision making
- Reduce the harmful effects of waste to our health and environment.

Target

As a result of our actions, by 1 July 2026, Southland will maintain a materials discarded per capita figure of 650 kilograms comprising 40 percent diverted materials.

Our Objectives

Five key strategic objectives have been developed to further support the target:

- Reduce the amount of material entering the waste stream.
- Reuse or repurpose material so it has a life before recycling or disposal.
- Reduce the amount of materials sent to final disposal by maximising recycling.
- Make the best use of recoverable waste as a renewable resource.
- Appropriate treatment and disposal of waste for the protection of our health and environment.

In order to achieve the five key regional strategic objectives WasteNet Southland have the following objectives. Under each of these five objectives, actions have been developed to achieve the objective, as a step towards realising the vision.

Waste Generation

Almost 65,900 tonnes[1] of material were discarded in Southland region during the period of 1 July 2018 to 30 June 2019, or the equivalent of 676 kilograms per person. Diverted material accounts for 27% of the materials discarded or 18,000 tonnes. Solid waste to the Southland Regional Landfill (SRL) accounts for the remaining percentage of 73% (47,900 tonnes). During 2014 and 2015 there was a spike in waste volumes (cleanfill) due to the demolition of the Mataura freezing works and other buildings in Gore District. During 2017 and 2018 two specific events (Mycoplasma Bovis and Bonamia ostreae) also increased waste volumes. Since 2015 waste volumes have been gradually increasing, which is associated with economic growth and population growth. The Covid-19 pandemic in early 2020 is anticipated to trigger a change in waste volumes due to a slowing of the local economy, especially tourism.

The target of 650 kg/capita discarded material has been achieved 6 times (years) since 2006. The diverted material target (40%) has not been achieved at an average of 28%. While the diversion target has not been achieved it is still appropriate to drive waste minimisation within the region. More investment in diversion facilities is required to achieve the diversion target of 40%.

Waste Facilities and Services

Existing recycling and waste facilities and services provided by the Councils, as well as the private and commercial sector, include:

- waste minimisation education and behaviour change programmes
- initiatives for reuse of waste and diverted materials
- kerbside collection of recyclables and rubbish
  - diverted material processing facilities, i.e. Material Recovery Facility (MRF), Scrap metal dealers, second-hand outlets (including clothing)
- cleanfill and hazardous waste facilities
- product stewardship and take-back schemes
- organic waste collections
- municipal and private landfill disposal
- public place recycling and rubbish receptacles (litter bins)
- removal and management of illegal dumping.

Future Demand

Future demand for waste management and minimisation services is driven by a number of key drivers including:

- demographic change (population, household size)
- economic activity changes
- land use changes

[1] This figure is derived by combining the tonnage of diverted materials (18,000 tonnes) and solid waste to landfill (47,900 tonnes).

- impact of waste flows from other regions
- consumption patterns and product quality
- occurrence of disaster events
- national policy and legislation
- impact of waste minimisation behaviour change programmes
- community expectations.

For the purposes of forecasting future waste tonnes, this Waste Assessment has adopted a medium growth of 2% reflecting anticipated population and GDP growth in Southland over the next 10 years. However, it is noted that a short-term decline in volumes as a result of the Covid-19 economic downturn is also anticipated.

As well as predicting the future waste infrastructure requirements, this assessment has taken into consideration diverted materials' infrastructural requirements. Central Government has signalled change over the next 3 – 5 years with an increase in both the Waste Disposal Levy and Emissions Trading Scheme costs, and possible introduction of standardised kerbside collections nationally. The increase in the Waste Disposal Levy presents an opportunity for regional investment in infrastructure to support the diversion of waste from landfill.

The demand for infrastructure to divert waste from landfill is anticipated to increase over the next 10 years. Short-term the existing diverted materials infrastructure is expected to meet the forecast demand, however medium to long term the Councils need to ensure they have the infrastructure in place to meet increasing demand.

Southland - Specific Issues

Having reviewed progress against the previous WMMP actions and considering the change in waste quantities since the last WMMP, the Council have identified the following issues that need to be addressed in the next WMMP:

- Volume of waste disposed fluctuates with economy
- High volume of divertible material disposed through transfer stations
- High volume of organic waste going to landfill
- Lack of resilience in recycling system
- Glass recovery
- Cost and volume uncertainty due to legislation change
- Community engagement networks are not big enough

Options Assessment

The Councils have considered options for addressing the region-specific issues and assessed these in terms of diversion potential, cost and ease of implementation. The options are grouped into the following categories:

- Influence - change behaviour through waste minimisation programmes and advocate for national change;
- Regulation - enforce diversion and behaviour change; and
- Service – provide facilities and services to increase diversion.

The preferred option over the short term due to affordability concerns and national legislative changes is to focus on influencing behaviour. WasteNet Southland will look to extend waste minimisation programmes to businesses and support local circular economy initiatives. Any change in service delivery or additional investment would be focused on reducing the impact of expected increased disposal cost.

1 THE SOUTHLAND REGION WASTE ASSESSMENT - INTRODUCTION

Territorial authorities are legally required to conduct a Waste Assessment and have regard to it in the review and preparation of their Waste Management and Minimisation Plans (WMMP). The Waste Management Act (WMA) (s44) also requires that a Waste Assessment be notified with the draft WMMP for public consultation. This process is required at intervals of no less than every six years. The 2018 review was delayed to 2020 due to operational priorities.

In December 2000 the WasteNet Councils, being Southland District Council (SDC), Gore District Council (GDC) and Invercargill City Council (ICC), agreed to cooperate on waste management and minimisation matters under the banner of WasteNet Southland. WasteNet Southland, as the main delivery agent for the Councils' waste management and minimisation activities, is the "owner" of this document.

The WasteNet Councils have jointly prepared this Waste Assessment which has been prepared as prescribed in the WMA s51.

The Waste Assessment provides details of the following:

- existing waste services provided in the region (Council and non-council)
- waste quantities, composition and flows
- identification of issues
- future demand for services
- vision, goals, objectives and targets for waste management and minimisation
- guiding principles to direct how to get to where the WasteNet Councils want to be
- an options assessment/statement of proposals for waste services and identified regional issues.

1.1 Documentation and accuracy

This document was prepared in April 2020 using information gathered from a variety of sources including data managed by the Councils, the Regional reports on Composition of Solid Waste in Southland Region 2018, Waste Not Consulting, and Rethinking Rubbish and Recycling – Southland Region, Sunshine Yates Consulting.

Best efforts were undertaken in drafting to achieve reasonable accuracy in the assessment, although in some cases data has been estimated or there are data gaps. Details regarding any limiting factors in preparing the Waste Assessment that are deemed to have materially impacted on the completeness or accuracy of the data, forecasts, estimates or options assessment have been noted where appropriate.

The information contained in this Waste Assessment was considered appropriate when giving regard to:

- the significance of the information
- the costs of, and difficulty in, obtaining the information
- the extent of WasteNet Councils' resources
- the possibility the WasteNet Councils may be directed under the Health Act 1956 to provide the services referred to in that Act.

1.2 Key terms and acronyms

Key Term/Acronym	Definition
Base year	1 July 2010 to 30 June 2011
Cleanfill	A cleanfill is any facility that accepts only cleanfill material which is described as material that when buried will have no adverse effect on people or the environment
C&D Waste	Construction and demolition waste
Diverted Material	Discarded materials such as materials collected for recycling, composting or other recovered or treated materials that are diverted from landfill
Domestic waste	Solid waste from households
ETS	Emissions Trading Scheme
Landfill	A disposal facility as defined in s7 of the Waste Minimisation Act 2008, excluding incineration.
LGA	Local Government Act
LTP	Long Term Plan
MfE	The Ministry for the Environment
MRF	Material Recovery Facility
NES	National Environmental Standards
NZWS	New Zealand Waste Strategy
Organics	Organic wastes that include kitchen, food and green wastes
RMA	Resource Management Act
RRC	Resource Recovery Centre
RTS	Refuse Transfer Station
SRL	Southland Regional Landfill
SWAP	Solid Waste Analysis Protocol (SWAP) Ministry for the Environment-led baseline programme to provide solid waste composition information
TA	Territorial Authorities. The second tier of local government in New Zealand, below regional councils.
Waste	Waste means waste disposed of to landfill and 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 to avoid doubt, includes any component or element of diverted material, if the component or element is disposed of to landfill
Waste Assessment	As defined by s51 of the Waste Minimisation Act 2008.
WasteNet Councils	The Southland District Council (SDC), Gore District Council (GDC) and Invercargill City Council (ICC) are the WasteNet Councils.
WMA	Waste Minimisation Act 2008
WMMP	A Waste Management and Minimisation Plan as defined in s43 of the Waste Minimisation Act 2008

2 LEGISLATIVE AND STRATEGIC CONTEXT

Strategic documents and legislation are combined in New Zealand to form the basic framework for waste management and minimisation. This chapter contains a brief summary of the national policy context and key legislation that the Councils must consider in the development of their Waste Assessment and WMMP.

- Waste Minimisation Act 2008
- Local Government Act 2002
- Hazardous Substances and New Organisms Act 1996
- Climate Change Response Act 2002
- Resource Management Act 1991 (as well as District and Regional Plans and consents)
- Health Act 1956
- Litter Act 1979
- Health and Safety at Work Act 2015
- New Zealand Waste Strategy 2010
- New Zealand Emissions Trading Scheme (under the Climate Change Response (Zero Carbon) Amendment Act 2019)

2.1 Key legislation

Waste management and minimisation in New Zealand is underpinned by the Government's core policy "The New Zealand Waste Strategy (NZWS) – reducing the harmful effects of waste, improving the efficiency of resource use".

A number of Acts of Parliament provide the legal framework for waste management and minimisation in New Zealand, with the primary legislation driving waste management and minimisation planning being the Waste Minimisation Act 2008 (WMA), the Climate Change Response Act 2002 and subsequent amendments, such as the Climate Change Response (Zero Carbon) Amendment Act 2019, the Local Government Act 2002 (LGA), and the Resource Management Act 1991 (RMA).

Taken together these Acts provide the legislative imperative and tools to support progress toward the high-level direction outlined in the NZWS. Because the NZWS and legislation are cornerstones to waste management and minimisation, careful attention is given to these in developing the Waste Assessment.

Appendix D and the next section provides a summary of national factors and key Acts, stating their relevance and/or implications to the Southland region's situation.

2.2 National factors

There have been several national and global changes over recent years that have impacted waste services:

- Early in 2018 China's National Sword Policy, imposed tighter restrictions on the import of certain recyclables, primarily mixed paper and plastic. China was the largest importer of recyclables. This has impacted the commodity price for recyclables globally.
- Nationally, the consequences of China's National Sword Policy have impacted recycling collection and processing contracts with significant cost escalations. Alternative markets are hard to find and are getting overwhelmed.
- Covid-19 has also tested the resilience of the recycling systems nationally. This has highlighted New Zealand's lack of investment in solid waste infrastructure.
- WasteMINZ (national industry organisation) and Ministry for the Environment are leading the national response to China's National Sword Policy.
- The Government's response to date includes banning single use plastic bags, contributed funding towards local processing plants with new technology, and review of container deposit legislation.
- There is a drive to standardise collection methodologies and types of materials collected from kerbside across the country.

- These global and national impacts may potentially result in an increase in the Government's waste disposal levy. This will impact landfill disposal costs, generating revenue for investment in the sector. The increased levy provides an opportunity for regional investment in waste diversion infrastructure with additional funds available from the levy.
- The Climate Change Response (Zero Carbon) Amendment Bill includes a target of reducing methane emissions by 24-74% below 2017 levels by 2050, and an interim target of 10% by 2030. It also has a target of reducing net emissions of all other greenhouse gases to zero by 2050. This will impact our asset portfolios including solid waste, particularly with increasing Emissions Trading Scheme costs (carbon tax) and transport used to collect and cart to landfills.
- There is a move towards councils providing organic collections as part of their waste minimisation programmes, particularly for the metropolitan councils. Due to high collect costs in rural areas, this is generally not appropriate in the rural sector. However, Government is investigating standardising kerbside collection services nationally which would impact local collection services.

3 WASTE DATA

This chapter contains a summary of the available information for waste collected, recycled, recovered, treated or disposed of in the Southland region. The information includes data about quantities, composition, source and final destination of materials, generated for the period July 2006 to June 2019 and Waste Not Consulting SWAP analysis 1 April 2018 to 3 June 2018.

The information in this chapter forms the basis for forecasting future demand (as set out in Chapter 5).

3.1 Southland catchment

Southland is the southernmost part of New Zealand with a diverse geography of coastal areas, floodplains, farmland, forestry, rivers and mountain ranges. Its land area is 31,600 square kilometres, of which 23% is intensively farmed and 60% is taken up by National Parks and conservation areas[2]. The Southland region consists of four main population centres, Invercargill, Gore, Te Anau and Winton, and over 30 other small townships. There are three Territorial Authorities (TA's) being Invercargill City Council, Southland District Council and Gore District Council, and one regional council - Environment Southland.

Southland enjoys a dynamic social, economic and cultural lifestyle. The resident population at the time of the 2018 census was 99,200, of which 55,300 reside in Invercargill City, 12,500 in Gore District and 31,400 in Southland District. Agriculture, forestry and fishing have traditionally formed the region's economic base. However, Southland is also home to a diversity of manufacturing and is one of the fastest growing tourist regions in New Zealand. Noting that due to Covid-19 in 2020 the tourism industry has been significantly impacted.

3.2 Data limitations, assumptions and accuracy

The data presented in this chapter does not represent all the waste and diverted materials generated in the region. We can only determine the amount of waste and diverted material from the data managed by the Councils and the voluntary information provided from the private and commercial sector. Information about all wastes is not readily available from private enterprise for reasons of commercial sensitivity.

Each of the WasteNet Councils holds historical data on diverted materials and solid waste to landfill for their district. For the purposes of this Waste Assessment and for comparativeness, data has been used since the last WMMP 2011. The data has been supplied directly by the WasteNet Councils (and is based on weighbridge records and/or contractor information).

To obtain a better understanding of waste data within the region, a per capita figure has been used as a guide. This is the total amount of waste produced divided by the total number of people in a defined area. It is an indicator of average 'waste' production on a per person basis but is not directly equivalent to the amount of waste an individual throws away each year, as much of the waste is produced from commercial sources. For consistency purposes, the Statistics New Zealand Census information has been used as the population figure.

It is acknowledged a Waste Assessment is only a snapshot in time of the data collected for the purposes of future waste planning and preparation of the WMMP. It is the conclusion of this report that the data within, when combined with the Waste Not Consulting *"Composition Study of Waste to Landfill in Southland 2018"* report and Sunshine Yates Consulting report, is sufficient to inform future waste planning within the Southland region.

[2] Accessed 7 November 2011 http://www.southlandnz.com/Home/LandPeople.aspx

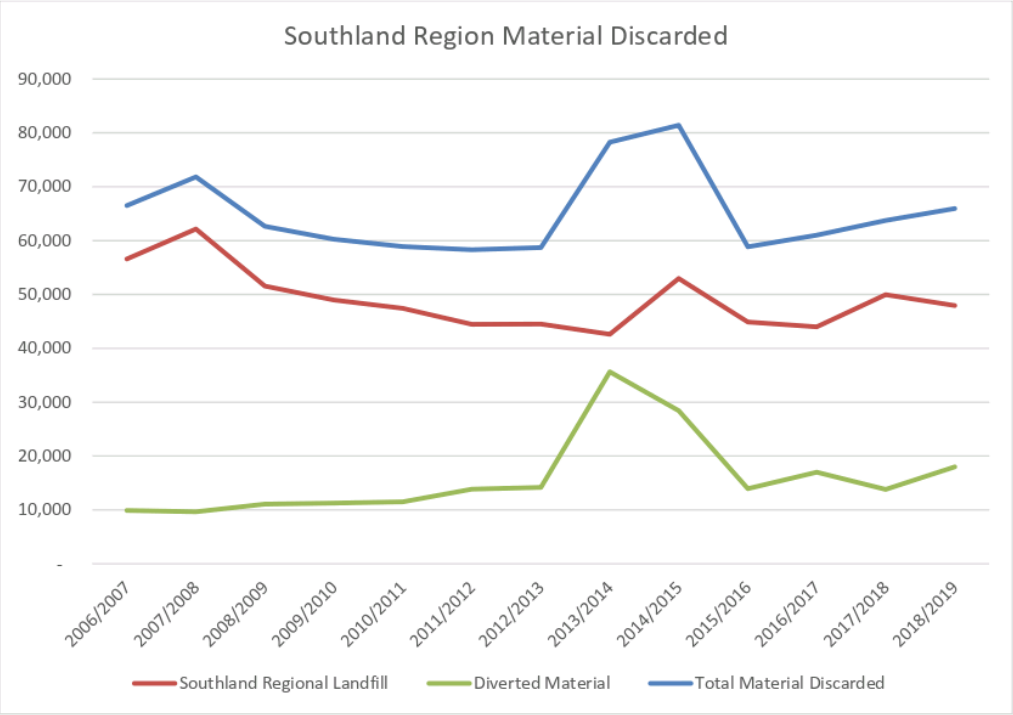
3.3 Materials discarded

By measuring the materials discarded, focus can be directed at the impact of reduction, re-use, recycling and recovery. This is not easy to measure, as accurate and measurable data about farm landfills, home composting and private landfills/recycling is not available. For the purposes of this report, amounts of diverted materials and solid waste disposed of to landfill have been combined to provide a baseline of the materials discarded in Southland.

Figure 3.3.1 illustrates the historic tonnage of materials discarded (both for disposal and diversion) since July 2006. Almost 65,900 tonnes of material were discarded in Southland region during the period of 1 July 2018 to 30 June 2019. Diverted material accounts for 27% of the materials discarded or 18,000 tonnes. Solid waste to the Southland Regional Landfill (SRL) accounts for the remaining percentage of 73% (47,900 tonnes).

During 2014 and 2015 there was a spike in waste volumes discarded due to the demolition of the Mataura freezing works and other buildings in Gore District (resulting in a spike of both material diverted to cleanfill and disposal to Southland Regional Landfill). During 2017 and 2018 two specific events (Mycoplasma Bovis and Bonamia ostreae) also increased waste volumes of potentially hazardous material. Since 2015 waste volumes have been gradually increasing, which is associated with economic growth and population growth.

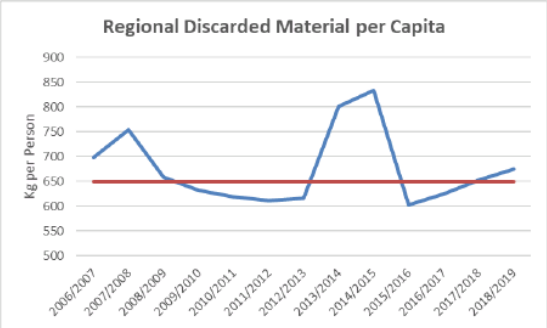
Figure 3.3.1. Total tonnage of materials discarded in Southland region (July 2006 to June 2019)



3.3.1 Materials discarded per capita

To obtain a better understanding of the materials discarded in Southland, a materials discarded per capita figure has been calculated. As depicted in Figure 3.3.2 the target of 650 kg/capita discarded material has been achieved 6 times (years) since 2006. Refer Appendix E for Council specific data based on the 2018 SWAP analysis.

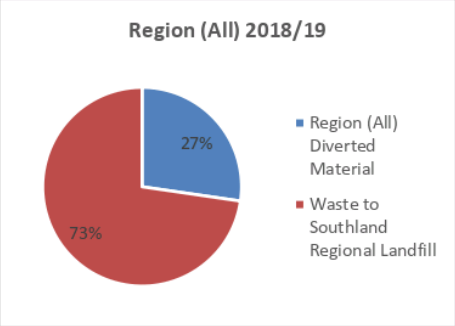
Figure 3.3.2 Regional Discarded Material per Capita



3.4 Diverted materials

The region has a diverted materials target of 40%. Figure 3.4.1 shows this has not been achieved with 27% diverted in 2018/19. While the diversion target has not been achieved it is still appropriate to drive waste minimisation within the region. More investment in regional diversion facilities is required to achieve the diversion target of 40%.

Figure 3.4.1 Waste diversion achieved for 2018/19



The diverted materials data in this Waste Assessment includes re-used and recycled materials, scrap metal, green waste, cleanfill, hazardous waste and e-waste. This information is based on the Councils' records sourced from weighbridge or contractor records and data from the 2018 SWAP analysis. Refer Appendix E for Council specific data.

The data indicates that in 2018/19 18,000 tonnes of material was diverted from landfill in Southland, a gradual increase since 2006. During 2011 kerbside recycling services changed to a fortnightly 240l bin recycling bin collection which increased material diversion. As a percentage Gore diverts more material than Invercargill City Council and Southland Districts. This is due to the volume of cleanfill diverted.

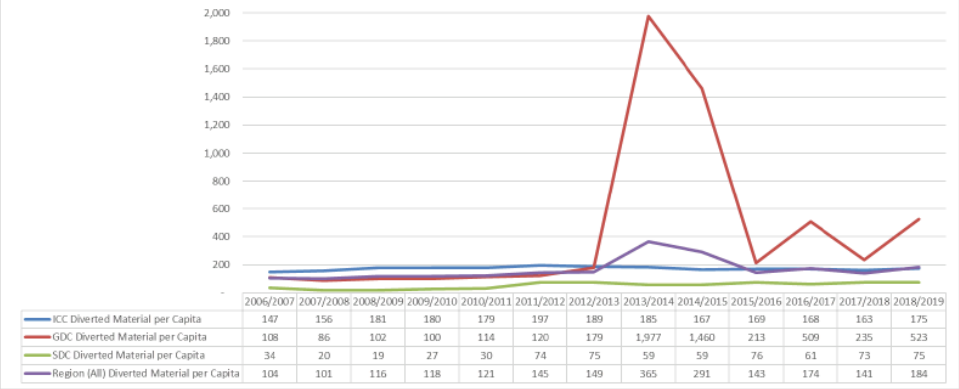
3.4.1 Diverted materials per capita

To obtain a better understanding of diverted materials within the region a per capita figure is used. Figure 3.4.2 illustrates the historic diverted materials per capita for the region, 121 kg/capita in 2010/11 which increased to 184 kg/capita in 2018/19. The 10 year average is 183 kg per capita of diverted material. This is skewed by the peak in cleanfill material, over the past 6 years. The tonnes of diverted material are expected to change from July 2020 with changes to kerbside recycling collection services.

Of note, Southland District is a good deal lower than the other Councils. This could be due to Southland District's rural nature and limited use of green waste and scrap metal facilities at Transfer Stations (as home composting and repair alternatives are more commonly used). It could also be due to areas not serviced by kerbside collection and use of farm landfills or burning.

The spike in Gore District diversion in 2014/15 is due to an increase in cleanfill from building demolition, e.g. Mataura freezing works and other buildings in Gore District. There is a lack of knowledge regarding cleanfill volumes for Southland District Council and Invercargill City Council.

Figure 3.4.2 Diverted material per capita in Southland (July 2006 to June 2019)



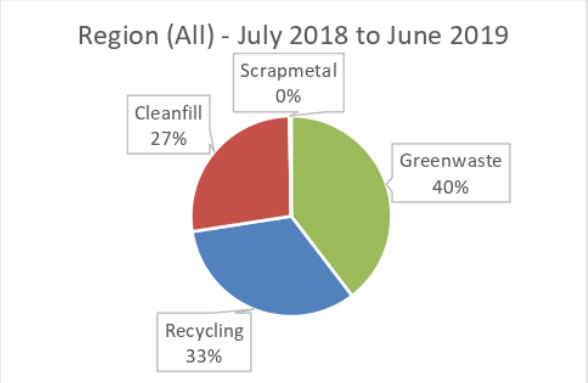
	2006/2007	2007/2008	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019
ICC Diverted Material per Capita	147	156	181	180	179	197	189	185	167	169	168	163	175
GDC Diverted Material per Capita	108	86	102	100	114	120	179	1,977	1,460	213	509	235	523
SDC Diverted Material per Capita	34	20	19	27	30	74	75	59	59	76	61	73	75
Region (All) Diverted Material per Capita	104	101	116	118	121	145	149	365	291	143	174	141	184

3.4.2 Sources of diverted materials

Data on diverted materials is limited to that managed by the WasteNet Councils and therefore reflects the residential market. Figure 3.4.3 shows the sources of diverted materials. On average 33% of these materials come from kerbside recycling and public drop-off centres (paper, cardboard, plastics, non-food grade polystyrene, metal cans and glass bottles and jars), with the remaining 67% sourced from Transfer Stations (green waste, cleanfill and scrap metal). The percentage of diverted material from kerbside recycling increased in 2011 and 2012 with the introduction of kerbside recycling collection services in Southland and Gore Districts and improved kerbside recycling collection services in Invercargill. This is anticipated to change due to changes to kerbside recycling collection services from July 2020.

No data is available on the commercial market for diverted materials.

Figure 3.4.3 Sources of diverted materials

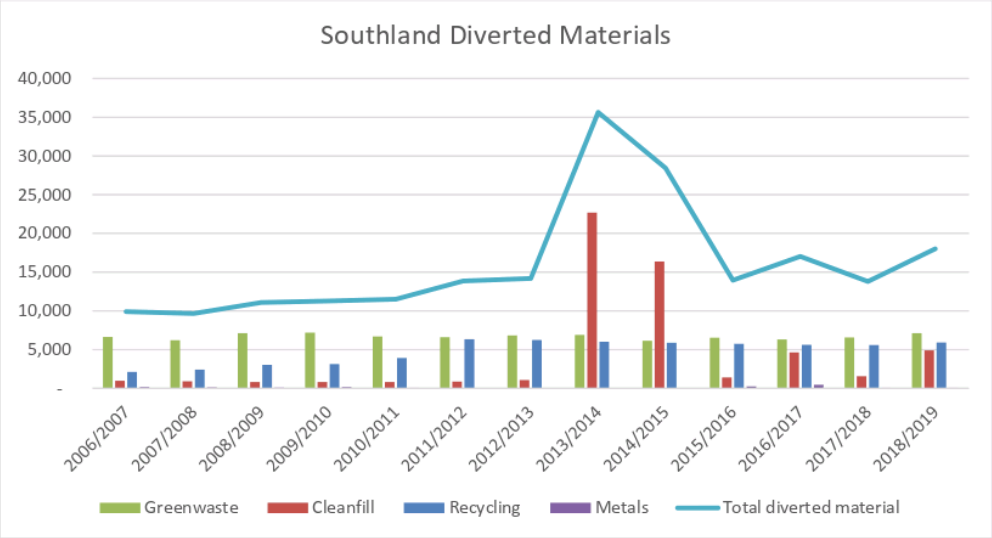


3.4.3 Composition of diverted materials

A summary of the composition of all diverted materials by year is presented in Figure 3.4.4 (a comparison of diverted materials by WasteNet council is provided in Appendix D). Overall, the total volume of diverted materials has been increasing. For the 2018/2019 year green waste made up the largest proportion at 40% followed by recycling at 33%. The volume of cleanfill varies considerably from year to year.

There are different diversion options available at the different transfer stations across the region, more diversion could be achieved with more consistent facilities available at all transfer stations.

Figure 3.4.4 Composition of diverted materials in southland region (July 2006 to June 2019)



3.4.3.1 Re-use

Invercargill City and Southland District Councils operate "second-hand" facilities as part of their Transfer Station Resource Recovery services. Data is not currently recorded on the volume or weight of materials diverted through these facilities.

3.4.3.2 Kerbside recycling and drop-off centres

Approximately 5,926 tonnes of recyclables were sorted and processed for the region in 2018/19 an increase from 3,929 tonnes in 2010/11. The recyclables were collected from kerbside collections, standalone public drop-off centres, and recycling facilities within Transfer Stations. These recyclables consist of paper, cardboard, glass bottles and jars, all plastics (note likely to be restricted to 1-2-5 in the near future), non-food grade polystyrene and aluminium/steel cans.

Figure 3.4.5 outlines the historic tonnage of recyclables for the region and within each district. The regional per capita figure for recyclables is 56 kilograms per person (170 kg per household per annum). Recycling volumes doubled with the introduction of new collection services in 2011 and 2012.

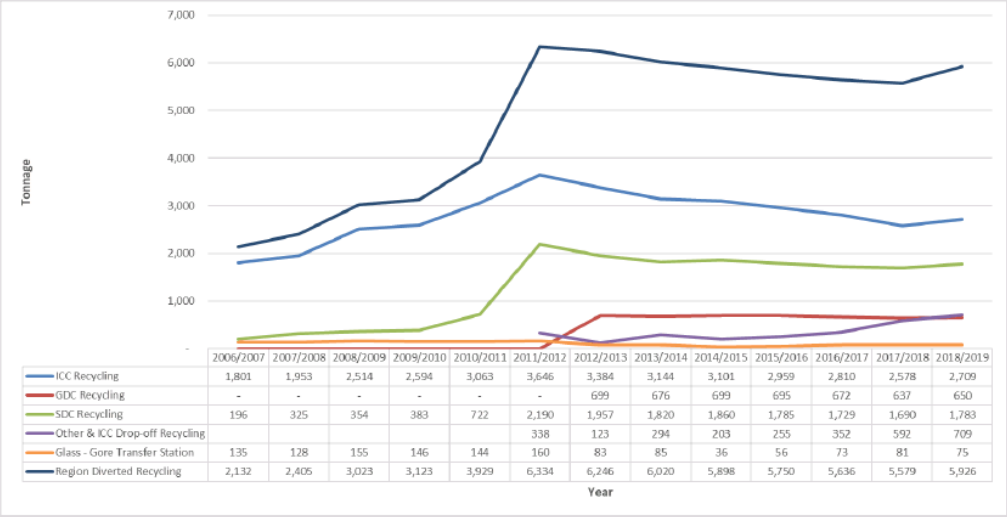
The level of contamination within the kerbside collection service and available markets impacts recyclable tonnage. National and regional studies have been undertaken into ways to improve the resilience of recycling services.

The average contamination rate over the past 5 years is 15% with a peak of 20% (2017/18). Other regions with fully commingled recycling bins also have high levels of contamination. WasteNet have been actively working since 2013 to improve contamination levels by undertaking bin inspections, implementing a 3-strikes policy and behaviour change campaigns.

Sunshine Yates Consulting completed an analysis and report 'Rethinking Rubbish and Recycling – Southland Region" to inform contamination management strategies.

There are plans to change the current recycling service which will impact the tonnage of recyclables diverted in the future.

Figure 3.4.5 Tonnage of recyclables (excluding contamination) collected in Southland Region (July 2006 to June 2019)



	2006/2007	2007/2008	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019
ICC Recycling	1,801	1,953	2,514	2,594	3,063	3,646	3,384	3,144	3,101	2,959	2,810	2,578	2,709
GDC Recycling	-	-	-	-	-	-	699	676	699	695	672	637	650
SDC Recycling	196	325	354	383	722	2,190	1,957	1,820	1,860	1,785	1,729	1,690	1,783
Other & ICC Drop-off Recycling						338	123	294	203	255	352	592	709
Glass - Gore Transfer Station	135	128	155	146	144	160	83	85	36	56	73	81	75
Region Diverted Recycling	2,132	2,405	3,023	3,123	3,929	6,334	6,246	6,020	5,898	5,750	5,636	5,579	5,926

Invercargill City Council began kerbside recycling in 2003 with the weekly collection of a 60-litre recycling crate. In July 2011 Invercargill implemented a fortnightly collection of a 240-litre yellow recycling bin, which accepts a wider range of products for recycling.

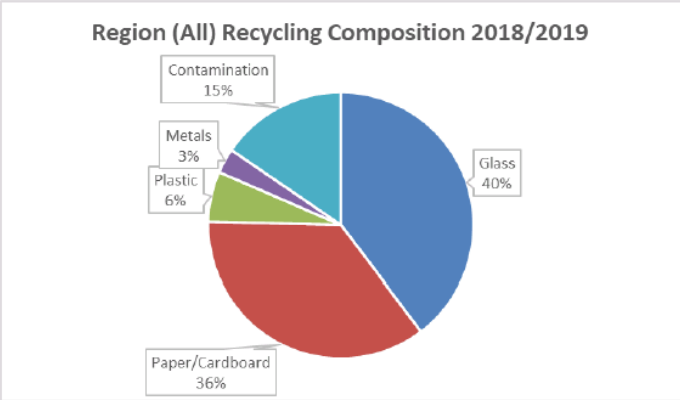
Southland District Council provides standalone public recycling drop-off centres and offers drop-off facilities at Transfer Stations. In May 2011, Southland District Council commenced kerbside recycling collections with the provision of 240-litre yellow recycling bins to participating properties on a fortnightly collection, in conjunction with an alternate rubbish bin service (in a 240-litre red bin).

Gore District Council offers public drop-off for glass at its Transfer Station. In July 2012 urban properties received a similar service to Southland District residents – an alternate fortnightly recycling 240-litre bin and rubbish kerbside collection service.

While recent global and local issues have affected the resilience of recyclable end to end solutions and markets in the short to medium term, there remains a need to support regionally consistent end to end recycling programmes that aim to achieve the highest benefit from recyclables and supports diversion from landfill.

Figure 3.4.6 shows the composition of recyclables by year and type, and whether the recyclables are collected through a kerbside collection process or public drop-off. The largest components of the recyclables collected are glass and fibre (paper and cardboard). A possible explanation for this is that this data is based on weight (tonnage) as opposed to volume. Glass and fibre (paper and cardboard) are heavier products compared to plastics and metals.

Figure 3.4.6 Composition of recyclables collected at kerbside and public drop-off centres



3.4.3.3 Scrap Metal

The WasteNet Councils operate "scrap metal" drop-off facilities as part of their Transfer Station services. The tonnage diverted varies considerably per year with a total of 1,583 tonnes over the past 13 years, 584 tonnes from Invercargill, 704 from Gore and 294 from Southland. No significant tonnes of scrap metal are captured from the Invercargill and Southland Transfer Stations and 55 tonnes per year from Gore. This suggests the commercial sector has the monopoly on the recovery of this material, it is also a data gap.

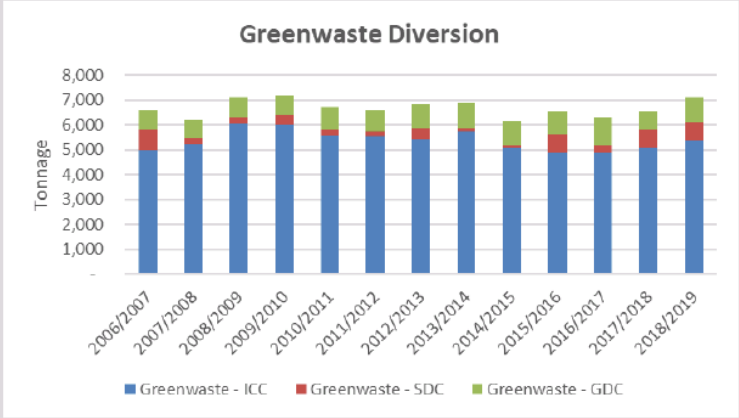
3.4.3.4 Green waste

Green waste facilities are operated by all WasteNet Councils and are actively used, with an average of 6,687 tonnes per year collected across the region. Table 3.4.1 and Figure 3.4.7 list the historic tonnage of green waste disposed of, for the region and each district, with the bulk of green waste collected from Invercargill.

Table 3.4.1 Tonnage of green waste by Council (July 2014 to June 2019)

Council	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019
Invercargill	5,087	4,876	4,871	5,083	5,388
Gore	964	946	1,121	759	1,057
Southland	109	727	307	729	687
Total	**6,160**	**6,548**	**6,298**	**6,571**	**7,131**

Figure 3.4.7 Green waste diversion by Council



3.4.3.5 Cleanfill

Invercargill City Council and Gore District Council operate "cleanfill" drop-off facilities as part of their Transfer Station services. Table 3.4.2 lists the historic tonnage of cleanfill and shows the variable yearly tonnage. The bulk of the cleanfill material is from Gore District with an average 387 tonnes from Invercargill City and 5,387 tonnes from Gore District. Southland District Council Transfer Stations do not accept Cleanfill.

Table 3.4.2 Tonnage of cleanfill material by Council (July 2014 to June 2019)

Council	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019
Invercargill	349	583	369	264	367
Gore	16,020	827	4,256	1,307	4,522
Total	**16,370**	**1,410**	**4,626**	**1,571**	**4,890**

3.4.3.6 Hazardous Waste

The Waste Not Consulting analysis shows that 7,025 tonnes/annum of potentially hazardous material is disposed to landfill from the Southland Region. There have been two significant events where a high volume of hazardous organic waste has been disposed direct to landfill from the region (Mycoplasma Bovis and Bonamia ostreae).

The WasteNet Councils operate limited "hazardous waste" drop-off facilities as part of their Transfer Station services. The available data indicates that these facilities are not well used with only 1 tonne per week collected from Invercargill Transfer Station and no quantifiable tonnes from Gore and Southland Transfer Stations and an estimated 3 tonnes per week within kerbside collections. Further research is needed to get a clear understanding of regional hazardous waste quantities. Hazardous waste is now a speciality service, requiring qualifications for safe handling.

It is noted that Environment Southland had undertaken a regional programme to remove unwanted agrichemicals from rural properties (the cost of this service was shared between WasteNet, Regional Council, farmers and supporting brand owners) and Product Stewardship schemes such as AgRecovery have been introduced. Promotion of such initiatives remains WasteNet preferred method of addressing this issue.

3.4.3.7 E-Waste

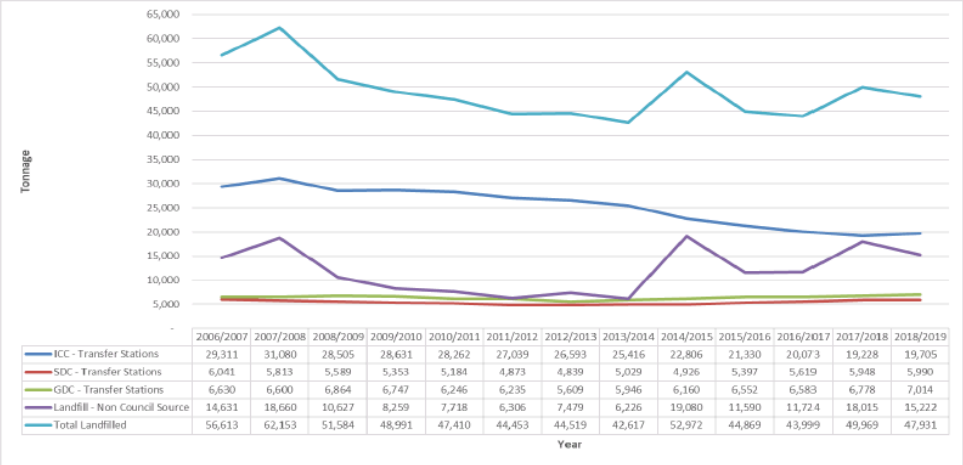
There is no available data on tonnage of E-waste captured annually. The region participated in all 4 national eDay events held annually from 2007 to 2010, resulting in a total of 96.5 tonnes of computer waste being diverted from landfill. E-waste services are dependent on what services the commercial sector provided.

3.5 Waste to Landfill

The total waste to landfill data in this Waste Assessment is of the waste disposed to the Southland Regional Landfill (SRL) which services the Southland region. The information reported is based on weighbridge records provided by the SRL operator.

Since opening in June 2004, the SRL has received approximately 773,577 tonnes of waste up until February 2020. Figure 3.5.1 illustrates the historic tonnage of waste disposed to landfill for the region and each district by financial year. Annual waste disposal volumes peaked in 2007 then decreased until 2014 when there was a spike in landfill disposal as a result of the demolition of the Mataura freezing works. In 2017 and 2018 two specific events (mycoplasma bovis and bonamia ostreae) increased potentially hazardous waste disposal and since 2015 waste volumes have continued to increase.

Figure 3.5.1 Tonnage of waste disposed to Southland Regional Landfill (July 2006 to June 2019)

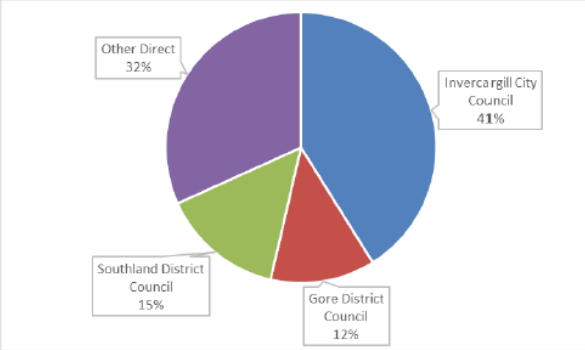


	2006/2007	2007/2008	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019
ICC - Transfer Stations	29,311	31,080	28,505	28,631	28,262	27,039	26,593	25,416	22,806	21,330	20,073	19,228	19,705
SDC - Transfer Stations	6,041	5,813	5,589	5,353	5,184	4,873	4,839	5,029	4,926	5,397	5,619	5,948	5,990
GDC - Transfer Stations	6,630	6,600	6,864	6,747	6,246	6,235	5,609	5,946	6,160	6,552	6,583	6,778	7,014
Landfill - Non Council Source	14,631	18,660	10,627	8,259	7,718	6,306	7,479	6,226	19,080	11,590	11,724	18,015	15,222
Total Landfilled	56,613	62,153	51,584	48,991	47,410	44,453	44,519	42,617	52,972	44,869	43,999	49,969	47,931

Until mid-2011, the Southland region was a self-contained waste "catchment", with virtually all residual waste generated in the region being disposed of at the SRL and virtually no waste generated outside the region being transported into the region. In mid-2011, a proportion of consolidated commercial refuse from outside of Southland region started to be transported to the SRL. This trend continues with 32% of waste to SRL not from the WasteNet Councils but from out-of-region. Other landfills now operate within the Region, SJ Timpany landfill has operated as a cleanfill site since 2004, and is now consented to dispose of solid waste as well as cleanfill. No data is available regarding disposal volumes from SJ Timpany landfill and private cleanfill sites.

Figure 3.5.2 demonstrates the regional split of waste to landfill by district for the 12 month period of July 2018 to June 2019. As could be expected, the majority (41%) of waste to landfill is sourced from Invercargill City, this is down from 68% in past assessments as now 32% of commercial waste is transported direct to landfill. Waste to landfill from Southland District is 15%, down from 19%, and 12% from Gore District, down from 13%.

Figure 3.5.2 Solid Waste to Southland Regional Landfill by Council (July 2018 to June 2019)

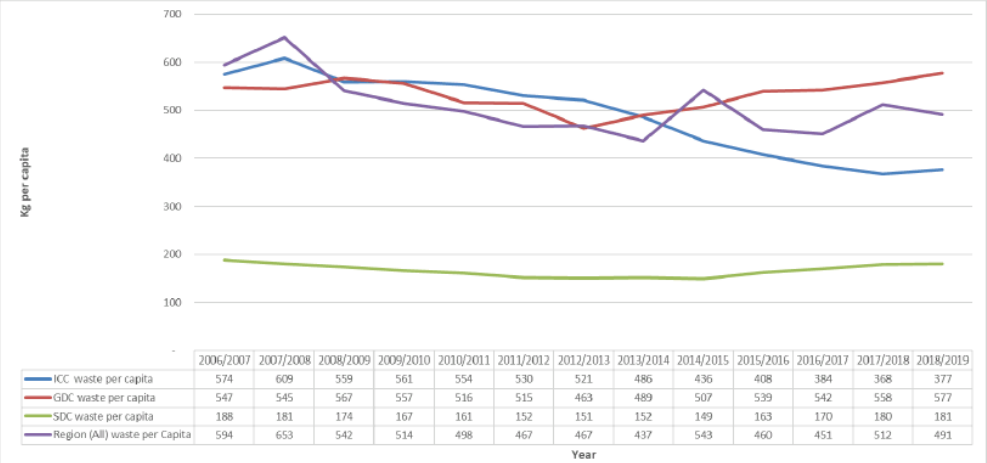


3.5.1 Waste per Capita

Figure 3.5.3 illustrates the historic waste per capita data by District. Waste per capita follows a similar pattern of decline until 2014, then annual increase as presented in Figure 3.5.1. The regional average of the last five years of 491kg per person, while increasing, is less than the 2007 peak of 653 kg per person. While Invercargill City waste per capita has declined, this is because a significant volume is now going direct to landfill rather than via the transfer station.

Of note, waste per capita for Southland District Council is a good deal lower than the other Councils. An explanation for this could be the rural nature of the District. There is anecdotal evidence from a number of rural councils that many rural property owners choose to make their "own arrangements" for waste disposal rather than participate in kerbside collections (as the kerbside service is not necessarily available to them). So, while the waste per capita is low, this could be evidence that alternatives are being used to deal with on-farm waste such as use of farm landfills and/or offal pits, and/or burning waste. Further research is needed in this area to clarify the quantities of on-farm waste.

Figure 3.5.3 Council Sourced Waste per capita to Southland Regional Landfill (July 2006 to June 2019)



	2006/2007	2007/2008	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019
ICC waste per capita	574	609	559	561	554	530	521	486	436	408	384	368	377
GDC waste per capita	547	545	567	557	516	515	463	489	507	539	542	558	577
SDC waste per capita	188	181	174	167	161	152	151	152	149	163	170	180	181
Region (All) waste per Capita	594	653	542	514	498	467	467	437	543	460	451	512	491

Note: excludes non-council sourced waste direct to landfill

3.5.2 Sources of waste to landfill

Figure 3.5.4 and Table 3.5.1 are based on the SWAP analysis in 2018. This shows approximately 62% of waste disposed came from the eight Council owned Transfer Stations and 6% from Council kerbside collections direct to landfill, the Council-controlled services account for 68% of waste disposed. This is a significant decrease from 89% of the waste disposed of in the 2010 year. The WasteNet Councils have good control and management of waste services in Southland, although this control has declined from 2010.

Figure 3.5.4 Sources of waste to Southland Regional Landfill (April 2017 to April 2018)

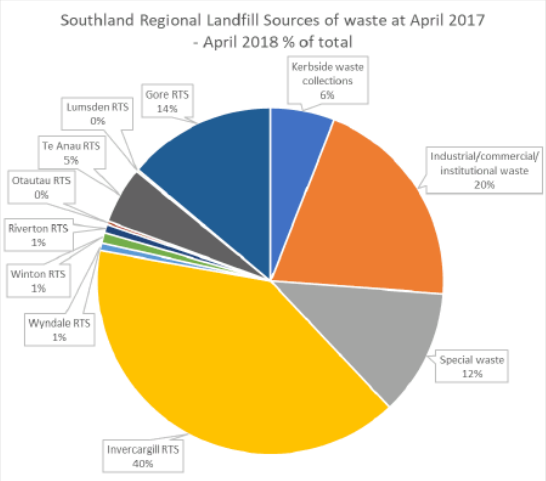


Table 3.5.1 Southland Regional Landfill Sources of Waste

Southland Regional Landfill Sources of waste *(Waste Not Consulting 2018 report)*	% of total	Tonnes per week April 2017 - April 2018	Tonnes per annum April 2017 - April 2018	Tonnes per annum July 2010 - June 2011
Kerbside waste collections (direct to landfill)	6%	55	2,893	2,772
Industrial/commercial/ institutional waste (direct to landfill)	20%	187	9,772	4,700
Special waste	12%	109	5,687	583
Invercargill RTS	*40%*	*370*	*19,280*	*28,355*
Wyndale RTS	*1%*	*7*	*342*	*547*
Winton RTS	*1%*	*9*	*482*	*954*
Riverton RTS	*1%*	*8*	*401*	*155*
Otautau RTS	*0%*	*2*	*128*	*121*
Te Anau RTS	*5%*	*49*	*2,547*	*2,531*
Lumsden RTS	*0%*	*2*	*114*	*460*
Gore RTS	*14%*	*129*	*6,705*	*6,245*
Transfer stations - Subtotal	**62%**	**575**	**29,999**	**39,369**
TOTAL FROM SOUTHLAND REGION	**100%**	**927**	**48,351**	**47,424**
OUT OF REGION	**No data available**			

Figure 3.5.5 shows the change in waste sources from 2011 to 2018 for waste received at the WasteNet Council transfer stations. There was a decrease in Industrial/Commercial/Institutional (ICI) waste in 2018 (23%) from 2011 (32%), likely due to more commercial waste going direct to landfill than via transfer stations. There is a decrease in private kerbside collections and an increase in Council kerbside collections which suggest more residents and now choosing to use the Council services.

Figure 3.5.5 Sources of waste to Southland Regional Landfill from Council operated Transfer stations (2011 and 2018)

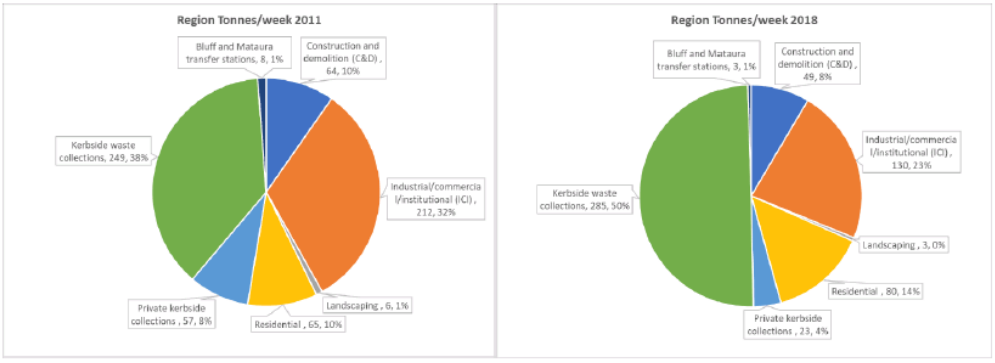
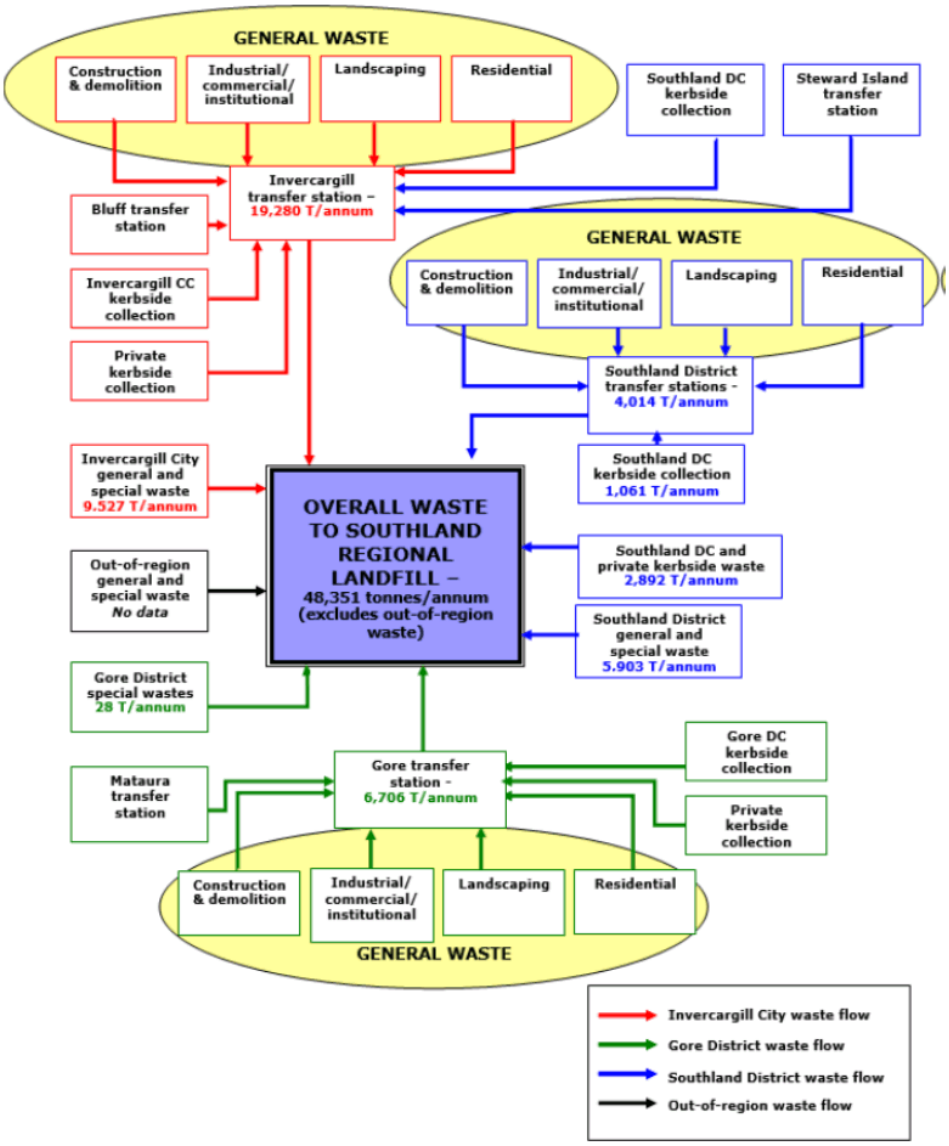


Figure 3.5.6 and Table 3.5.2 depict the source and flow of waste by district. There is a significant variation in waste sources from each of the three districts (more detailed information is included within Appendix E) which reflects the services provided and rural urban communities. Southland transfer stations have the highest proportion of residential waste via transfer station as fewer households have a kerbside collection service. Gore has the highest proportion of waste from Industrial/ Commercial/ Institutional. Invercargill has the highest proportion from kerbside collections.

Figure 3.5.6 Solid Waste to Southland Regional Landfill (April 2017 to April 2018)



Source: Composition of Solid Waste in Southland region 2018, Waste Not Consulting.

Table 3.5.2 Waste to landfill from Southland region – 2007, 2011 and 2018

Waste to landfill from Southland region	Tonnes per annum			Tonnes/capita/annum		
	2007	2011	2018	2007	2011	2018
Gore District	6,622	6,245	6,735	0.534	0.516	0.539
Invercargill City	36,269	31,262	28,808	0.703	0.580	0.528
Southland District	13,722	9,917	12,809	0.470	0.343	0.409
TOTAL SOUTHLAND REGION	**56,613**	**47,424**	**48,351**	**0.607**	**0.500**	**0.491**

Note: Southland District tonnes per annum includes potentially hazardous waste (e.g. WWTP sludge)

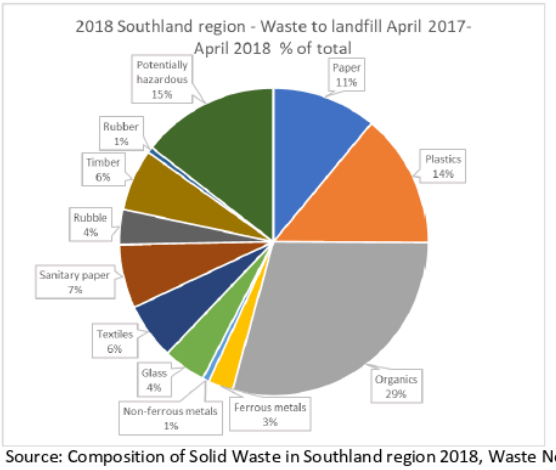
3.5.3 Composition of waste to landfill

An analysis of the composition of waste in Southland was completed in April 2018. Visual surveys of waste being disposed of at the Invercargill Transfer Station, SRL and attendant surveys were held at Gore Transfer Station and four Southland District facilities. The data from the surveys was combined with the weighbridge records and other information from the WasteNet Councils to calculate the composition and quantity of waste being disposed to SRL.

Figure 3.5.7 illustrates the regional composition of waste disposed. Organics, which includes kitchen waste and green waste, was the largest component of the regional waste stream during the survey period, comprising 29% of the total. The survey took place in April, which is associated with low vegetative growth and low levels of gardening activity by residents. It is likely the quantity of green waste would have been greater at other times of the year. Generally, waste disposal is lowest in the winter months, rising towards an annual peak in spring, early summer.

The compositions are similar between all three districts, with some minor differences. Gore has more paper as a percentage, Southland has more organic waste volumes, while Invercargill has the greatest volumes overall.

Figure 3.5.7 Composition of solid waste to landfill (April 2017 to April 2018)



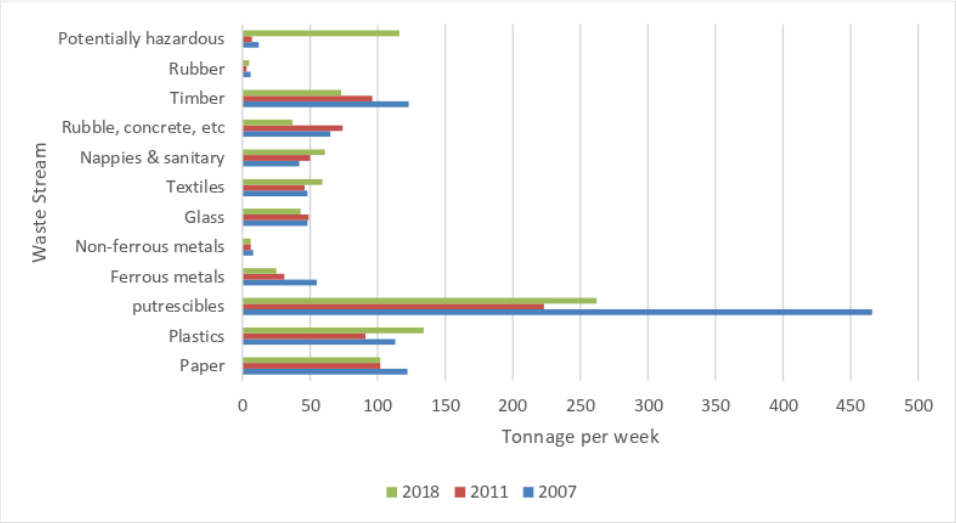
Source: Composition of Solid Waste in Southland region 2018, Waste Not Consulting.

3.5.3.1 Data Comparison between years

Figure 3.5.8 shows how the composition of waste to the SRL has changed since the previous analysis in 2007 and 2011. The most notable difference is that putrescible waste appears to be half of the 2007 levels. One of the reasons for this dramatic decrease is the time the surveys were undertaken, the 2007 survey was conducted in November, the 2011 survey was conducted in June, and 2018 in April – which is associated with low growth and low levels of gardening. It is acknowledged that as food prices increase, less food becomes waste.

Waste tonnage decreased between the 2007 and 2011 analysis then increased between 2011 and 2018. 2018 tonnage was still lower than 2007. This trend applies to all waste streams except metals, rubble concrete, timber with continued decreasing volumes, and potentially hazardous which increased substantially in 2018. The potentially hazardous waste includes organic waste relating to specific events. Plastic volumes also increased in 2018 over previous years due to limited markets for mixed plastic.

Figure 3.5.8 Comparison of 2007, 2011 and 2018 tonnes per week for regional composition of solid waste to Southland Regional Landfill



3.6 Diversion Potential

Potentially divertible materials are components of the waste stream that have been identified as targets for possible diversion from landfill, mainly through recycling and recovery activities. The Waste Not Consulting composition report calculated the diversion potential from Transfer Stations (excluding kerbside collections). Table 3.6.1 below shows the results.

Table 3.6.1 Diversion potential of the Councils Transfer Station general waste stream (excluding kerbside collections)

Material	Invercargill City		Gore District		Southland District		Southland Region
	% of total	Tonnes per week	% of total	Tonnes per week	% of total	Tonnes per week	Tonnes per week
Recyclable materials							
Paper - Recyclable	6.7%	9	8.9%	6	4.7%	4	19
Paper - Cardboard	4.5%	6	4.6%	3	3.5%	3	12
Plastics - Recyclable	1.3%	2	1.8%	1	1.1%	1	4
Ferrous metals	4.7%	7	3.3%	2	5.5%	4	13
Non-ferrous metals	0.7%	1	0.8%	1	0.7%	1	3
Glass - Recyclable	1.9%	3	2.4%	2	1.8%	1	6
Textiles - Clothing	2.8%	4	3.4%	2	2.1%	2	8
Rubble - Cleanfill	0.3%	0	0.1%	0	0.4%	0	0
Timber - Reusable	0.5%	1	0.3%	0	0.5%	0	1
Subtotal	**23.4%**	**33**	**25.7%**	**17**	**20.3%**	**16**	**66**
Compostable materials							
Organics - Kitchen waste	4.2%	6	4.4%	3	12.4%	10	19
Organics - Compostable green waste	2.3%	3	1.3%	1	6.8%	5	8.5
Rubble - New plasterboard	0.9%	1	0.5%	0	1.0%	1	2
Timber - Untreated/unpainted	3.6%	5	2.6%	2	3.4%	3	9.5
Subtotal	**11.0%**	**15**	**8.8%**	**6**	**23.6%**	**18**	**39**
TOTAL - Divertible	**34.4%**	**48**	**34.5%**	**23**	**44.0%**	**34**	**105**

Source: Composition of Solid Waste in Southland Region 2018, Waste Not Consulting

The 2018 analysis had a regional total of potential divertible material of 105 tonnes per week, less than the 2011 figure of 137 tonnes per week. This highlights that while recycling programmes have been successful at diverting some material from landfill more can be achieved. Approximately 54% of potentially divertible material is recyclables, 30% paper and 15% metals. Glass within the region is still going to cleanfill. Organics remain a high proportion of potentially divertible material at 26%. C&D waste (rubble and timber) makes up 12% and textiles 8% of the total potentially divertible waste streams.

3.6.1 Organic materials

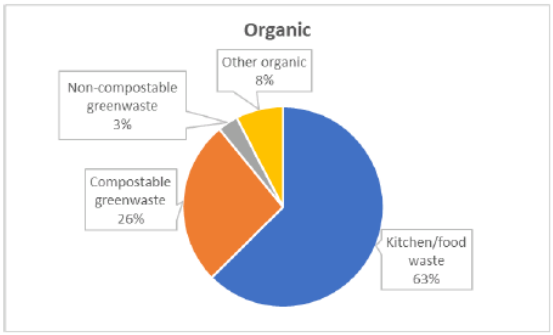
Organic materials are a major contributor of waste to landfill in Southland. This is a consistent trend in both the 2011 and 2018 analysis at 29%. The 2018 analysis indicates 29% (14,110 tonnes per year) of all waste to landfill is organic. A large proportion of the special and hazardous wastes (dead animals, oyster farm waste, and sewage sludge) also include organic matter which increased substantially in 2018 to 15% (7,025 tonnes per year).

Figure 3.6.1 illustrates the composition of organic materials disposed to the SRL in 2018. Kitchen waste accounts for 63% of the total, followed by compostable green waste (26%). Multi-material or 'other' such as meat processing waste and dead animals accounts for 8%. This excludes the hazardous wastes which include dead animals and oyster farm waste.

Currently there is no regional infrastructure to recover kitchen and food waste. Therefore, industry and households must manage the process themselves, through utilisation of pig farms, home composting/ worm farming, Bokashi systems or other alternatives.

The Councils' Transfer Stations provide differential charging for green waste only loads.

Figure 3.6.1 Composition of organic materials disposed to Southland Regional Landfill (April 2018 to June 2018)

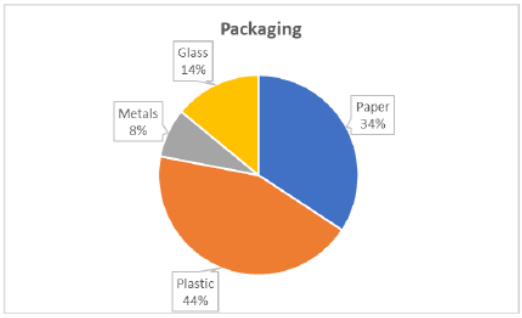


3.6.2 Packaging Materials

Plastics, paper, metals and glass (packaging materials) account for a high proportion of waste to landfill, at 33% (15,915 tonnes per year). Figure 3.6.2 illustrates the composition of packaging materials disposed to the SRL in April 2018.

There are several key sources of recyclable material that can be targeted in an effort to reduce packaging materials to landfill. The Councils have put in place kerbside recycling collection services which can be enhanced to improve the quality of material captured and encouraging greater waste separation at Transfer Stations (potentially through differential charging for recyclable materials). Other initiatives include container deposit schemes and focusing on the Industrial/ Commercial/ Institutional diversion services.

Figure 3.6.2 Composition of packaging materials disposed to Southland Regional Landfill (April 2018 to June 2018)

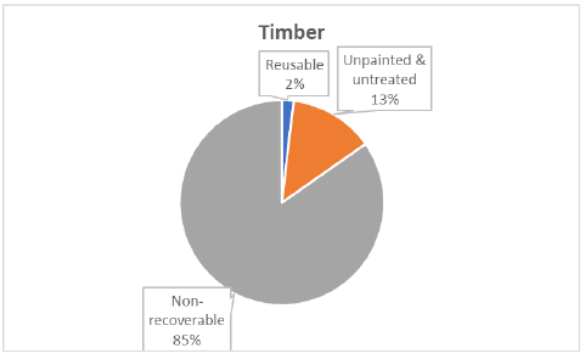


3.6.3 Timber

Timber accounts for 7% (3,143 tonnes per year) of all waste to SRL. Figure 3.6.3 illustrates the composition of timber disposed in April 2018. The majority 85% is non-recoverable, however 15% is potentially divertible or reusable.

Major sources of timber waste are the industrial, commercial, and C&D sectors. Commercial operators are generally the largest producers of timber material to landfill and this group can potentially be the focus of waste minimisation efforts, although there are some challenges in the recovery of post-consumer waste wood due to contamination and presence of treated timber.

Figure 3.6.3 Composition of timber disposed to Southland Regional Landfill (April 2018 to June 2018)



4 EXISTING RECYCLING AND WASTE FACILITIES AND SERVICES

This Chapter includes a summary of information regarding waste management and minimisation services provided within the region for reduction, re-use, recycling, recovery, treatment, and disposal. This includes that of the Councils as well as the private and commercial sector, where available and applicable.

These services include:

- waste minimisation education and behaviour change programmes
- initiatives for re-use of waste and diverted materials
- residential kerbside collection of recyclables and residual waste
- rural recyclables drop-off points
- cleanfills
- organic waste recovery
- Transfer Stations operation for both domestic and commercial types of waste and diverted materials
- hazardous waste
- landfill disposal
- litter bin servicing and removal of illegal dumping.

4.1 Reduction

There are several programmes and initiatives that are in place in the Southland region that encourage waste reduction. It should be noted that while programmes are listed under "reduction" initiatives, the programmes generally relate to all levels of appropriate waste management and minimisation behaviour, i.e. re-use, recycling, recovery, treatment, and disposal.

Under the banner of WasteNet Southland, regional waste education and behaviour change programmes are delivered. WasteNet currently runs or supports several programmes aimed at all levels of the community.

- Each of the Councils financially supports the Enviroschools programme facilitated by Environment Southland. Enviroschools aims to take a holistic approach to environmental education through planning, designing, and creating a sustainable school.
- Wide range of national and regional teaching resources. This includes DVDs, books, posters, case studies, activities, guest speaker, field trips, fact sheets and stage productions. (Environment Southland also offers environmental education services).
- A comprehensive website is accessible – www.wastenet.org.nz. The aim of the site is to be a "one-stop-shop" for Southlanders seeking information about waste management and minimisation. The site includes information on a variety of topics (from home composting, residual waste collections, business/farm/school waste) and tools (Southland A to Z waste guide, posters, bin labels, kerbside collection guides).
- Use of social media, radio and print advertising to support key messages. For example, WasteNet will advertise in community newspapers promoting home composting and use of green waste facilities at transfer stations.
- *Waste Free with Kate* offers a series of workshops on Waste Free Living, Waste Free Parenting, and Food Lovers Masterclass – providing adult waste education.
- Love Food Hate Waste New Zealand programme run by WasteMINZ and funded by Territorial Authorities. This programme is focused on giving practical actions and information to New Zealanders wanting to reduce their food waste.

Private organisations also offer regional waste education and behaviour change programmes or services. These include:

- The Pantry, South Alive and South Coast Environment Centre regularly offer workshops and courses such as home composting, worm farming, sustainable building and furniture repair.
- Repairing and upgrading goods. According to the Southland Yellow Pages directory there are 6 repair agents in the Southland region.
- Paper for Trees Programme run by Environmental Education for Resource Sustainability Trust operate this national school programme that rewards schools with trees for recycling paper. It is acknowledged that this programme is focused on recycling rather than reduction.

4.2 Re-use

There are a number of initiatives in the region that promote further use of waste or diverted materials.

- Invercargill City Council contracts a local business to operate a resource recovery service - the Garage Reuse Shop - within the gates of the Invercargill Transfer Station. In addition to the sale of second-hand goods, the Garage Reuse Shop also repairs goods, offers spare parts and produces sellable products from inwards goods, i.e. planting pots from washing machine drums, shelving from washing machine cases, etc.
- Southland District Council Transfer Stations offer free second-hand goods. Customers can leave second-hand goods for other customers to uplift free of charge.
- Communities within the Southland District provide "inorganic bulky item" collections where residents place second-hand goods at their kerbside for others to freely uplift. Items not uplifted are collected by the Council and appropriately disposed of at the local Transfer Station.

Private organisations also offer the re-use of waste or diverted materials. According to the Southland Yellow Pages directory 12 second-hand clothing stores and 10 second-hand stores operate in the Southland region. In addition to physical stores there are also online options such as TradeMe.

4.3 Recycling

4.3.1 Recycling Collection Services

There are several council services that cater for the diverted materials market within the Southland region. These include kerbside, household and commercial recyclables collections provided by contractors on behalf of the Councils, and recycling facilities at the transfer stations. In addition, the commercial sector has several similar services available to residential and commercial customers.

The Councils also provide drop-off and public place recycling facilities. Southland District has 11 satellite recycling centres in the form of 40-foot shipping containers strategically located throughout its district. The MRF located in Invercargill City has a recycling centre attached to the building which is accessible 24-7 for household volumes. Invercargill City has 15 public place recycling bins installed in its city centre. Gore District's Pakeke Lions operate a recycling drop-off facility for paper and cardboard. Table 4.3.1 provides details of the Councils' kerbside recycling collection services.

Table 4.3.1 Councils' kerbside recycling collection services

Council	Service provision	Recyclables accepted	Contractor
Invercargill City	240 litre mobile bin, fortnightly to 21,461 premises (commenced July 2011).	Paper, cardboard, metal cans and tins, white polystyrene, glass bottles and jars, all plastics (inclusive bags, packaging, containers, bottles, trays and lids)	Collected by Bond Contracts Ltd and delivered to the MRF operated by Southland disAbility Enterprises.
Southland District	240 litre mobile bin, fortnightly to 10,259 premises (commenced May 2011).		
Gore District	240 litre mobile bin, fortnightly to 4,864 premises (commencing July 2012).		

The WasteNet Councils' contract with Southland disAbility Enterprises for recycling processing services ends on 30 June 2020. Going forward each Council will make their own arrangements for recycling processing services, which may result in a level of service change.

Gore District Council has confirmed changes to the kerbside recycling collection service to a kerbside glass bottles and jars only collection from 29 June 2020. Drop-off facilities will be set up in the District for recycling cardboard and aluminium cans.

There are several commercial businesses providing recycling collection services in the Southland Region as detailed in Table 4.3.2.

Table 4.3.2 Private sector recycling collection services

Name/Operator/Owner	Key service/waste stream	Location
All Waste Solutions	Collection of recyclables excluding glass from businesses	Invercargill/Te Anau
Bond Contracts	Collection of recyclables from households	Invercargill and surrounding areas.
Southern Transport Holdings	Collection of recyclables excluding glass from businesses	Invercargill/Winton
Oji Fibre Solutions	Collection of paper, cardboard and plastics from businesses	Invercargill
Document Destruction Services	Collection of confidential documents for shredding from locked 240 litre mobile bins	Invercargill
Milford Development Authority	Collection of recyclables from businesses	Milford Sound
Paddys Bins	Collection of recyclables from households	Invercargill and surrounding areas.
Kiwi Skips	Collection of recyclables from households	Invercargill and surrounding areas.

4.3.2 Processing Facilities

There are several diverted material processing facilities in Southland. A summary list of known recycling/recovery facilities is outlined in Table 4.3.3.

Table 4.3.3 Diverted material processing facilities in Southland region (excluding organics)

Name/Operator/Owner	Key service / waste stream	Location
Southland disAbility Enterprises - Materials Recovery Facility (MRF)	Sort and processing of recyclables from the Councils kerbside collections Also accept recyclables from businesses Operate a 24-7 recycle drop off centre for households Recyclables – all plastics, white polystyrene, paper, cardboard, tin/steel, glass bottles and jars Sorting and processing of balewrap and e-waste	28 Ettrick Street, Invercargill
Carter Holt Harvey Full Circle	Processing of paper and cardboard (fibre) for recycling.	28 Ettrick Street, Invercargill
Scrap metal dealers (5) operate in the region	Scrap metal	Refer to Southland Region Yellow Pages
Document Destruction Service Southland	Confidential shredding and recycling of paper	18 Otepuni Avenue, Invercargill
Demolition World	Reuse and recycling of C&D waste	290 Bain Street, Invercargill
Southern Aggregates	Processing of glass bottles and jars into crushed aggregate for roading	Invercargill
Pakeke Lions	Sorting and processing of paper and cardboard	Gore

4.3.3 Cleanfill

Environment Southland regulates cleanfills. According to their records 4 facilities and 2 sites are currently consented to operate in the Southland region.

4.3.4 Product Stewardship/Take Back Schemes

A summary list of known product stewardship schemes operating in New Zealand is outlined in Table 4.3.4.

Table 4.3.4 Known existing product stewardship schemes in New Zealand

Product Stewardship Scheme	Service/Key waste stream
AgRecovery	Provides NZ farmers and growers with programmes for container recycling, drum recovery and collection of unwanted and/or expired chemicals.
Dell New Zealand	Take-back of Dell branded computer equipment.
Envirocon	Waste concrete (including potentially harmful liquids) is diverted from landfill and upcycled into value-added precast concrete products for the Interbloc Modular Wall System.
Exide Technologies	Take-back vehicle batteries.
Fiji Xerox Zero Landfill Scheme	Fuji Xerox remanufacture, reuse and/or recycle used equipment such as printers, photocopiers and printing consumables. Parts that cannot be reused are recycled.
Fonterra Milk in Schools recycling programme	Milk cartons (including straw and straw wrapper) are collected from schools participating in the programme. They are broken down into components (paper, aluminium foil and plastic) and recycled into roof tiles, books and paper.
Glass Packaging Forum	The forum connects businesses that sell glass-packaged consumer goods with those that collect and recycle glass. This helps to improve the quality and quantity of glass recycled. The aim is zero container glass to landfill.

Product Stewardship Scheme	Service/Key waste stream
HP New Zealand	Take-back of HP/Compaq branded computer equipment.
Interface ReEntry Programme	The scheme recycles used Interface carpet tiles into new carpet tiles and other products. PVC backed carpet tiles beyond their usable life are sent back to the original manufacturer in the US where they are stripped and remanufactured into new carpet tiles.
Plasback	Plasback collects and recycles agricultural plastics such as bale and silage wrap, and crop bags. The silage plastic is recycled into Tuffboard, a plywood replacement sheet that has many uses on farms.
Refrigerant recovery scheme	The Trust for the Destruction of Synthetic Refrigerants, also known as RECOVERY collects and responsibly disposes of refrigerants used in the refrigeration and air conditioning industries.
Resene Paintwise	Take-back of Resene branded paint and paint receptacles. User pays for non-Resene branded paint and paint receptacles.
RE:Mobile	The programme offers e-waste recycling for mobile phones and accessories. Unwanted mobile phones still in working order are sold for refurbishment and resale overseas while others are recycled. Proceeds from the scheme are donated to Sustainable Coastlines, an organisation which plants trees along waterways to restore habitats for native animals, reduce sediment and improve water quality.
Recovery Oil Saves the Environment (ROSE)	The used-oil recovery programme enables users, oil producers and regulators to responsibly collect, transport, use and dispose of used oil.
Soft Plastic Recycling Scheme	Soft plastic packaging is collected from participating stores and delivered to 2 NZ processors – Future Post in Waiuku and Second Life Plastics in Levin. The soft plastics are made into new products such as plastic fence posts, cable covers and garden edging.
Sharp Comprehensive Recycling and Waste Reduction Scheme	Sharp New Zealand aims to reuse and recycle 100% of its packaging materials, electronic products, equipment and obsolete and used parts.

There are several other commercial organisations that will accept waste materials for recycling, though recycling is not their main function. For example, Hearing Aid batteries can be recycled through Pharmacies; EIS freely accepts residential eco-bulbs for recycling. The Southland Orange Pages - orangepages.org.nz - (produced by WasteNet) details how to reduce, re-use, recycle, recover, and dispose of waste in Southland, listing all known regional outlets.

4.4 Recovery

The WMA defines recovery generally as the extraction of materials or energy from waste or diverted material for further use or processing, and this includes making waste or diverted material into compost.

The Councils currently run or support services for the effective and efficient recovery of organic materials including:

- Encouraging home composting, bokashi or worm farming.
- Southland District Council operation of two green waste only sites. These sites are located in Riversdale and Wallacetown.
- All the region's Transfer Stations have separate green waste facilities. The green waste is held on site, shredded, and either used on local parks, given away at no charge, or used for landfill remediation.

Table 4.4.1 Organic waste operators

Name/Operator	Key service / waste stream	Location
All Waste	Green waste collection from 240 litre mobile bins (as required pick up)	Invercargill, Te Anau
Easy Bins	Green waste collection from 140/240/360 litre mobile bins	Invercargill and surrounding area
Kiwi Skips	Green waste collection	Invercargill and surrounding area
Southern Transport	Green waste collection	Southland
Paddys Bins	Green waste collection	Gore District

4.5 Treatment and Disposal

4.5.1 Hazardous Waste

Hazardous Waste facilities are located at each Council's Transfer Station for the collection of domestic quantities. When required, the collected chemicals are neutralised and treated by a professional chemical contractor.

It is noted that these facilities are not well used, and further investigation is recommended to learn where the hazardous waste in Southland is going.

4.5.2 Landfills

Environment Southland regulates landfills. There is one A-Grade Sanitary Landfill in the region which is owned and operated by A.B. Lime. All municipal solid waste from the Councils' network of Waste Transfer Stations is disposed to this facility. The Southland Regional Landfill (SRL) was opened in June 2004 following the closure of all other active landfills. As per its resource consent conditions the facility operates a gas flare to destroy methane gas.

Prior to the establishment of the SRL, each Council operated their own landfills. These landfills are closed and are being managed and monitored as required. Invercargill has two closed landfills located in Bluff and Invercargill (New River Estuary Landfill). Gore has two closed landfills located in Mataura and Gore. Southland has 64 closed landfills (typically located close to townships) but it is noted that the management of these closed landfills is not necessarily always council's responsibility.

In the Regional Solid Waste Plan it is a permitted activity to dispose of household waste on a rural property or an on-farm landfill. The exact number of permitted on-farm landfills is unknown.

4.5.3 Litter Bins

The Councils operate a network of litter bins for the disposal of waste while people are "out and about". The majority of the litter bins are located in shopping centres, significant reserves and recreation areas. Contractors regularly collect the rubbish from these bins and deliver them to the local Transfer Station.

In 2010 Invercargill City Council participated in the MfE trial programme "Recycling in Public Places Initiative" and received funding for 5 public place recycling bins. And in 2011 Invercargill received funding for a further 10 public place recycling bins from the Glass Packaging Forum as part of their Rugby World Cup 2011 promotions. The public place recycling bins are too contaminated for the contents to be recovered for recycling. The use of public place recycling bins is reviewed as part of the Council planning process.

4.5.4 Fly dumping/Illegal

Illegal dumping or fly dumping of rubbish occurs in remote areas, recreational areas, abandoned properties and on roadsides. Rubbish can also be found dumped outside Transfer Stations, Recycle Centres and piled up beside urban litter bins. Roadside rubbish is typically cleaned up by the Councils' roading contractors. Other illegal dumping sites are uplifted by the Councils' staff, and where applicable litter enforcement notices are issued.

There is evidence to suggest that as Transfer Station fees increase (through ETS and Waste Levy Costs) the incidence of illegal dumping will also increase, as people perceive that they cannot afford to appropriately dispose of waste.

The Department of Conservation and Environment Southland also have responsibilities for illegal dumping. The extent of the problem of illegal dumping is not known, as each organisation records it differently. The issue of Freedom Campers was raised at a national level following tourism industry concerns of the anticipated increase in tourism numbers during the Rugby World Cup. Individual local authorities have implemented a range of bylaws, restrictions, and measures depending on the extent of the concern locally.

4.6 Regulation

In addition to waste facility assets and the provision of services, the Councils also have responsibilities and powers as regulator and statutory obligations placed upon them by the WMA.

The Councils operate in the role of regulator with respect to:

- management of litter and illegal dumping under the Litter Act
- trade waste requirements
- nuisance related bylaws

The WMA requires that the Councils review their waste bylaws every five to ten years. Waste related bylaws must not be inconsistent with a council's WMMP which is reviewed every six years. Table 4.6.1 summarises the current scope of solid waste bylaws in the region.

Table 4.6.1 Solid waste bylaws – Southland region

Council	Bylaw came into force	Consent to collect household waste	Ban on identified waste streams to landfill	Collection requirements	Facility requirements
Gore District	2008		**From household waste collection**	✓	✓
Invercargill City	2008	✓	**From household waste collection**	✓	✓
Southland District	2011	×	×	✓	×

The Regional Council also has responsibilities and powers as regulator and statutory obligations. Currently Environment Southland is consulting the public on changes to its policies regarding waste. The resulting policy changes will impact the Councils and the draft WMMP, as the WMMP cannot be inconsistent with Regional Council plans and policies.

5 FUTURE GROWTH AND DEMAND FOR WASTE SERVICES

The future demand for waste services will be driven by a number of key drivers including:

- demographic change, e.g. population, household changes
- change in commercial and industrial activity/economic conditions
- land use changes
- impact of waste flows from other regions
- consumption patterns and product quality
- the occurrence of natural disaster events
- national policy and legislation, e.g. product stewardship schemes/waste levy
- impact of waste minimisation behaviour change programmes, future initiatives
- community expectation

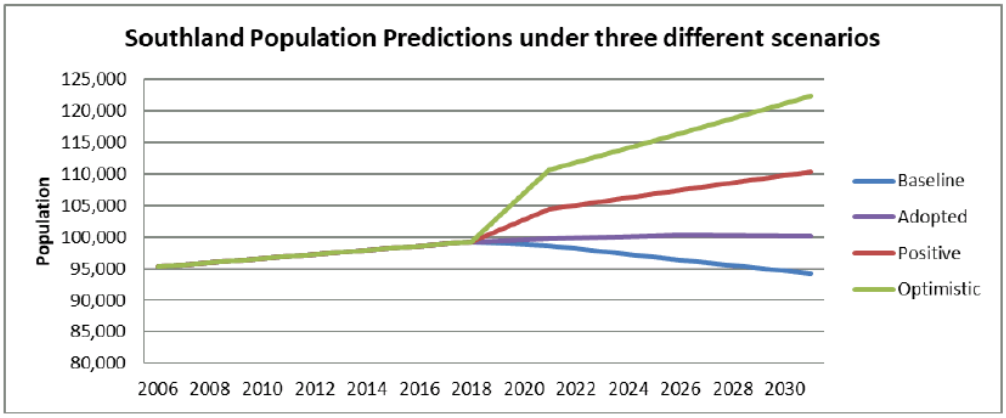
In taking the above demand drivers into account it is noted that there will be continued pressure on existing waste management and minimisation infrastructure and services. While there is adequate landfill disposal capacity in the medium to long term future, it is the Councils' desire to see the best use made of the region's natural and physical resources.

With moderate projected population growth there will be an increasing demand over time on the Councils' kerbside collection services. These demands can generally be met through expansion of fleet and collection routes.

5.1 Demographics/population change

A key factor affecting future demand is population growth. The following data has been sourced via Statistics New Zealand data, noting that not all data from the 2018 census was available. Figure 5.1.1 graphically displays different growth scenarios and the adopted population projection. The Southland population has grown by 1% over recent years. This steady growth is expected to continue in the short term but go back into decline over a 20-year period.

Figure 5.1.1 Southland Predicted Population Growth



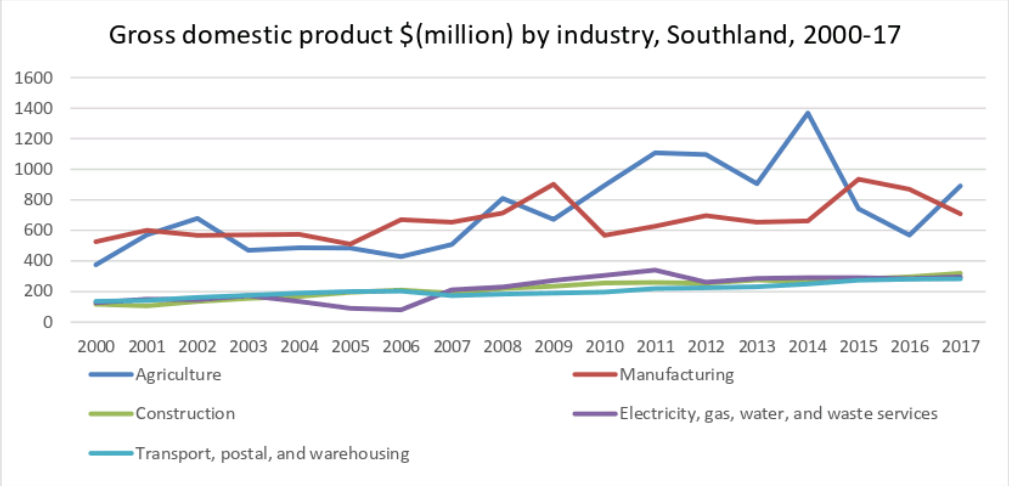
Perhaps more important from the Councils' perspective for waste planning is the projection of the number of occupied dwellings. Kerbside collection services are currently provided to 36,584 premises across the region. For waste management planning purposes councils generally tend to plan services using the number of households. Household numbers generally mirror the expected changes in population growth.

5.2 Commercial and industrial economic activity

The other factor that has a large determinative effect on the volume of waste produced is industrial activity and economic conditions as measured by the Gross Domestic Product (GDP). Southland Regional GDP, 2013-18 represents 2.0% of New Zealand GDP, valued at $5.8 billion in 2017. Key points include:

- From 2013–18, Southland's economy increased 20.5 percent (national increase was 30.9 percent).
- Southland's share of national GDP decreased from 2.2 percent to 2.0 percent over the period.
- The 2013–18 increase was primarily driven by agriculture and manufacturing.
- In 2016, Southland's GDP decreased 4.0 percent, driven by falls in agriculture (primarily dairy cattle farming) and manufacturing.
- In 2017, Southland's GDP increased 8.3 percent, driven by a strong increase in agriculture due to higher milk prices. This was partly offset by an 18.6 percent fall in manufacturing.
- In 2018, Southland's GDP increased 7.1 percent, driven by increases in agriculture (primarily dairy cattle farming) and manufacturing.

Figure 5.2.1 Economic growth



5.3 Land use changes

Changing land use can also impact on demand for services. Over recent years there has been an increase in dairy conversions, resulting in construction of dairy sheds and demolition of farm buildings, but this is not expected to continue. There has been an increase in tourism which places pressure on operating hours for recycling and waste facilities. The impact of Covid-19 had an immediate impact on tourism in 2020 which is expected to be short term. New subdivisions in areas such as Te Anau and Invercargill generate construction waste in the short term and household waste in the long term, while also impacting the kerbside collection routes and collection vehicle capacities.

5.4 Waste from other areas

The policy, services, and facilities of one district or region can dramatically impact on demand for services in neighbouring districts or regions. This is well demonstrated in other parts of New Zealand, where policy and/or pricing changes have a direct relationship on waste movements between districts. The location and pricing of landfills and transfer stations will have an effect on the amount of waste received by them. Pricing and location are the key causes of waste flight between districts.

Pricing of landfill disposal is a useful method for managing demand for landfill services, however this can be difficult for councils that use privately operated landfills. The Councils have the ability to manage waste disposal to some extent through the requirements of their agreement with AB Lime Ltd. This also allows them to work with the landfill operator with respect to future operational issues.

5.5 Consumer behaviour

Consumer behaviour is a key driver for household waste generation in particular. OECD research indicates that there are a number of factors that influence household waste generation including:

- family composition, e.g. household numbers and children
- household income and size
- attitude toward the environment and recycling
- presence of volume-based charging systems for waste
- frequency of waste collection
- technological shifts/product supply changes
- increased product packaging
- presence of infrastructure and services to enable resource recovery.

These issues are the target of a range of council and government policies and programmes, both at a local and national level. Obviously contributing factors such as family size and household income will be difficult to influence. However, there are positive correlations between attitude toward the environment and waste generation that can be influenced.

Other important factors are the presence of volume-based charging systems, such as user pays schemes and/or other economic disincentives such as waste levies.

Another example of how these factors can be influenced is through the establishment of product stewardship schemes for priority products. There are a number of local 'community-based social marketing' programmes that have arisen over the last decade, including several of them implemented as part of WasteNet's waste minimisation education programmes. These policies and programmes have the common aim of reducing waste generation at a household level by targeting influencing factors.

5.6 Natural and man-made disasters

Natural and man-made disasters apply a different pressure upon waste services and other inter-related services. The earthquakes in Christchurch, Covid-19 pandemic, National Sword, and local MPI events re-emphasise the need for planning. Lessons can be learnt from these events to assist in preparing for future events in Southland.

The Councils continue to develop and review plans in conjunction with Civil Defence agencies.

5.7 National policy and legislation

Central Government has an important role to play in driving waste minimisation across the country, including in Southland. National policy will always influence the demand for waste services. Councils can advocate for changes at a national, that then support local waste minimisation efforts, through active participation in consultation processes. By participating in consultation, the WasteNet Councils can ensure that Southland-specific considerations are factored into national legislation. There are several policy and legislation changes being considered in the short term including:

- waste levy increase
- container return scheme
- ETS changes
- response to China National Sword
- response to Covid-19

Legislation such as the WMA contains a range of mechanisms aimed at reducing waste to landfill, such as the waste levy and product stewardship provisions. A variety of local regulatory measures exist that can affect demand for services. While some of these were discussed in Chapter 2, they are assessed further here with respect to their implications on future demand and as demand management strategies.

5.7.1 Extended producer responsibility and priority product consultation

Product stewardship relates to a process through which those involved in the lifecycle of a product or service are involved in identifying and managing its health, safety and environmental impacts from the development and manufacture of a product through to its use and final disposal.

For example, there are many products that are difficult or hazardous to dispose of, yet the industry takes no responsibility for ensuring final disposal of the product. Schemes are often required to allow for disposal costs to be added to a product, such as in 'take back' or 'deposit refund' schemes, which work well in some countries for products such as tyres or containers.

Other issues stem from the rapid nature of technological change and thus obsolescence of some products, even before the end of their usable life.

While product stewardship schemes in New Zealand accredited under the WMA are likely to focus on minimising waste, they may also reduce other environmental impacts during the product's lifecycle. Some schemes may work to ensure a product is disposed of properly or recycled, while other schemes may work to make changes in the design of a product to reduce the use of toxic material. This would likely reduce both the environmental impact of manufacturing and make recycling easier.

The WMA provides for regulations to be developed in relation to the priority products that are identified by the Government. The Government recently identified the following proposed priority products:

- tyres
- electrical and electronic products (e-waste)
- refrigerants and other synthetic greenhouse gases
- agrichemicals and their containers
- farm plastics
- packaging (beverage packaging, single-use plastic packaging)

The Councils will continue to support national and local product stewardship schemes and advocate to see schemes developed that support local waste diversion initiatives. Due to affordability issues increased local waste diversion infrastructure will require central government support and funding.

5.7.2 Waste Disposal Levy Increase

Aside from the product stewardship provisions of the WMA, it also contains Waste Disposal Levy provisions which, as discussed in Chapter 2, will provide funding to promote waste minimisation initiatives and if increased over time will provide a disincentive to landfill waste. It is likely that the waste levy will be increased significantly over this WMMP planning cycle. Central Government is proposing to increase the Waste Disposal Levy from $10 per tonne to $60 per tonne and extend its application to other types of landfill (but at a lower cost per tonne). Thee large increases in levy rates are expected to reduce demand for landfill services and increase demand for recycling and waste diversion. It may also increase the need for enforcement to address illegal dumping.

5.7.3 Emissions Trading Scheme (ETS)

There continues to be legislative change including the Climate Change Response (Zero Carbon) Amendment Act 2019, that impacts on waste services and the cost associated with landfill disposal. Increased ETS price and reduction in availability of NZ Units in the ETS is anticipated in this WMMP planning cycle. The cap on the price of NZ Units is expected to increase from $25 per tonne to $50 per tonne. These changes are expected to increase demand for recycling and waste diversion. Landfill gas collection and treatment (using landfill gas to fuel lime dryers instead of coal) are expected to off-set increasing ETS costs.

5.8 China National Sword

The imposed restriction on the quality of recyclable material accepted by China has had a global impact on the market and revenue for recyclables, particularly mixed plastic and paper. The significant reduction in commodity prices and difficulty in finding stable markets has led to changes to recycling collection and processing services. This includes limiting the types of some materials collected, removing glass from mixed collection services, and a focus on reducing contamination through the end to end process. Over recent years, including during the pandemic, some recyclables previously diverted from landfill have been cleanfilled or landfilled with no cost-effective available alternative.

For this situation to change Central government need to take leadership on the issue and remove non-recyclable plastics from the market. Due to affordability and logistical reasons it is currently difficult to implement effective measures on a regional basis.

5.9 Community Expectation

If waste minimisation objectives continue to be important to the community, demand will continue for kerbside collection of recyclables and there will be increased demand for the collection of other recoverable materials as well as the associated processing infrastructure. There may be increasing pressure on existing resource recovery centres to expand their capacity and, if these objectives are to be met, there is likely to be a need for Transfer Stations not currently providing recovery services to improve their operations.

A key strategy to achieve diversion targets is the development of resource recovery facilities at Transfer Stations where a great proportion of reusable and potential divertible material is captured. There is the opportunity for local circular economy businesses to co-locate at the Transfer Stations to support this diversion.

5.10 Projected waste volumes

Over recent years there has been an increase in waste to landfill in the Southland Region (see Chapter 3 for more analysis). This is largely due to prevailing economic conditions, while there has been a focus to divert material from landfill from domestic sources this has not translated into industry and commercial sources. Chapter 3 also discusses the fact that significant diversion potential still exists.

While the region has experienced economic growth over recent years, the Covid-19 pandemic in early 2020 will result in a decrease in tourism which is anticipated to flow through to a reduction in waste volumes. It is difficult to determine what lasting effect this will have on the local economy. Economic growth and local MPI events have had the most significant impact on waste generation over recent years.

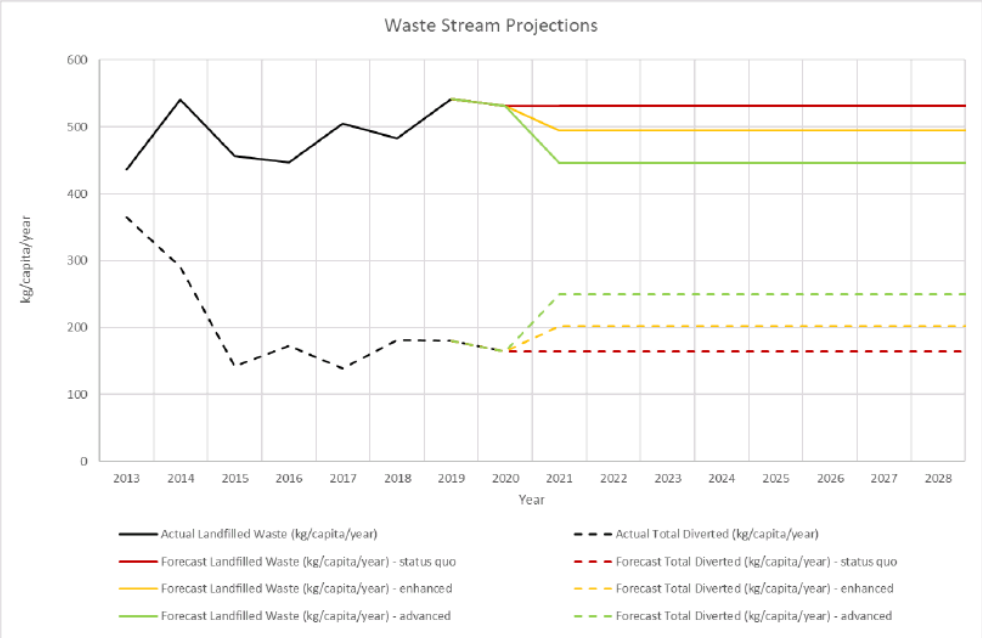
Local changes to recycling processing and collection services will be implemented from July 2020. The change in service will be different for each Council and will impact both the volume of diverted material and waste to landfill. Recycling service changes are due to national and local factors that have impacted markets for recyclables and cost of service.

Figure 5.10.1 provides actual and projected waste volumes to landfill and diversion volumes, based on adopted population growth and lower economic growth. The changes in recycling services have been factored into projections for the next two years and long-term projections have been modelled on three scenarios:

- Status quo – no change to services or programmes (27% diverted material 2018/19, dropping to 24% 2020/21)
- Enhanced status quo – minor changes to services, increased education programmes, minor improvements at transfer stations (33% diverted material)
- Advanced status – significant investment into new services and facilities to support greater diversion (40% diverted material)

Further description of options to support waste diversion are provided in Chapter 7.

Figure 5.10.1 Projected waste volumes



The projected waste volumes shown above illustrate the expected change in kg/capita/year over the next 2 years based upon three different options that could be introduced from 1st July 2020.

The status quo will not result in any improvement in Council achieving its vision, goals objectives and targets. However, the enhanced or advanced options show a significant opportunity to reduce the amount of waste sent to landfill (and a corresponding amount of waste diverted per capita) reducing landfill waste per capita by 85 kg per capita per year if all advanced options are implemented. Noting over the next two years waste volumes are expected to increase, and diverted material decrease, with the change to recycling services.

Under the enhanced option landfilled waste is expected to reduce over the period of the plan from the expected 2020/21 level of 530kg per capita to **494kg per capita**. Diverted material is expected to increase from the expected 2020/21 level of 165kg per capita to **202kg per capita**.

Under the advanced option landfilled waste is expected to reduce over the period of the plan from the expected 2020/21 level of 530kg per capita to **446kg per capita**. Diverted material is expected to increase from the expected 2020/21 level of 165kg per capita to **250kg per capita**.

6 COUNCILS' FUTURE PLANNING FRAMEWORK

6.1 Where do we want to be?

The first five chapters of this Waste Assessment reviewed the current situation with respect to waste management and minimisation industry and services in the Southland region and have considered the potential for growth and other demand drivers for the next 20+ years.

The purpose has been to assist in forecasting future demand for various services and to determine the suitability of the current services when considering both public health protection and waste minimisation objectives. This exercise has also assisted in setting an estimated baseline from which any future goals and/or targets will be set, as well as helping to identify key waste streams and priority areas.

This section considers the Councils' direction with regard to vision, goals, and principles for achieving waste reduction and for meeting the forecast demand for services.

The reason for discussing the Councils' vision, goals and principles is to provide a sense of direction when scoping the options. It is difficult to scope what options might be needed if there is no consideration for the outcomes desired. The vision, goals and principles discussed in this Waste Assessment have been derived from looking at the region's existing WMMP and the Councils LTPs.

6.2 Vision and goals

Southland people treasure their environment and acknowledge that the natural and physical resources are what make Southland unique. However, Southland still faces the challenge of using resources to encourage development and ensure standards of living while safeguarding the health of the environment, community and individuals.

The vision of 'A Sustainable Southland' has already been adopted by the Councils and this forms the direction in terms of options scoping. To achieve the vision of a 'Sustainable Southland' the region needs to become a minimum waste producer with businesses and individuals maximising opportunities to reduce, re-use, recycle and recover Southland resources. The region as a whole must take an active role and responsibility for waste management and minimisation.

Achievement of this vision will help to prevent degradation of the environment by lessening the need for raw resources and landfills, and it will increase business competitiveness and provide job opportunities within Southland.

6.2.1 WasteNet Southland Mission, Values, Objectives and Targets

Our Mission

To provide the coordinated delivery of solid waste services within Southland to achieve the region's **Vision – waste is a resource.**

Our vision of the future

"The effective and efficient stewardship of waste as a resource with a residual value to protect our health and environment" is our vision for a region that treasures the environment that supports us now and into the future.

Our Goals

Three goals underpin this vision:

- Work together to improve the efficient use of resources
- Use the waste hierarchy to guide decision making
- Reduce the harmful effects of waste to our health and environment.

Our Target

As a result of our actions, by 1 July 2026, Southland will maintain a materials discarded per capita figure of 650 kilograms comprising 40 percent diverted materials.

Our Objectives

Five key strategic objectives have been developed to further support the target:

- Reduce the amount of material entering the waste stream.
- Re-use or re-purpose material so it has a life before recycling or disposal.
- Reduce the amount of materials sent to final disposal by maximising recycling.
- Make the best use of recoverable waste as a renewable resource.
- Appropriate treatment and disposal of waste for the protection of our health and environment.

In order to achieve the five key regional strategic objectives WasteNet Southland have the following objectives. Under each of these five objectives, actions have been developed to achieve the objective, as a step towards realising the vision.

6.3 Guiding Principles

In developing options, Council will be guided by the following principles:

- Addressing legislative requirements
- Alignment with the NZ Waste Strategy
- Alignment with the WMMP vision "To value resources and eliminate waste and its harm to the environment"
- Recognition of Kaitiakitanga/stewardship
- Prioritisation of actions based on waste hierarchy
- Allowing for integration of technology/recycling and recovery processes
- Acknowledgement that while behaviour change is required to minimise waste, convenience influences behaviour

6.4 Southland - Specific Issues

Having reviewed progress against the previous WMMP Action Plan and considering the change in waste quantities since the last WMMP, the Councils have identified the following issues that need to be addressed in the next WMMP:

1. **Volume of waste disposed fluctuates with economy:**
   The overall volume of waste has increased as a result of economic growth and in response to significant events. There is a need to introduce systems to support a circular economy, ensuring waste remains a resource and disposal volumes reduce, even during periods of economic growth.
2. **High volume of divertible material disposed through transfer stations:**
   Dry recyclables, construction and demolition waste, and re-usable items are disposed at transfer stations by both residential and commercial customers, when they could be reduced, re-used, or recycled. There is an opportunity to further promote the use of existing diversion options and provide more options to separate waste streams at transfer stations.
3. **High volume of organic waste going to landfill:**
   There is no end-to-end processing solution for organics in the Southland region and no stable end market for organics processing products. Organic waste includes food waste, green waste, biosolids and other special wastes.

4. **Lack of resilience in recycling system:**
   The resilience of the New Zealand recycling system has been tested in recent years, starting with the impact of China's National Sword policy on the availability of end markets for recyclables, and more recently with the impact of Covid-19 on the ability to deliver recycling services during a pandemic response. There is a need to provide a more stable recycling system in the region.

5. **Glass recovery:**

   Due to high logistic cost, most glass captured within Southland is sent to cleanfill rather than beneficial use. The introduction of a container return scheme would impact glass recycling/ reuse systems.

6. **Cost and volume uncertainty due to legislation change:**
   Significant national regulation changes are likely to occur in this WMMP planning cycle. These include an increase in the Waste Disposal Levy, and an increase in price and reduction in availability of NZ Units in the Emissions Trading Scheme. The possible introduction of a container return scheme and other product stewardship schemes may impact recycling bin composition and transfer station waste composition. At the same time, these changes present opportunities for the development of regional waste infrastructure to support these national changes.

7. **Community engagement networks are not big enough:**
   Waste minimisation requires all Southlanders to understand the importance of the circular economy and make good decisions about how they manage their resources and waste. There is a need to make sure that WasteNet's communication network is broad enough to influence all parts of the community. Although WasteNet has well-established channels for engaging with residents, there is a need to increase engagement with commercial waste generators.

These issues are assessed as relevant to the options discussed in Chapter 7.

7 OPTIONS ASSESSMENT

This chapter reviews the practicable options available to meet the forecast demand for waste management and minimisation services in the Southland region, focused on addressing the Southland - specific issues.

7.1 Options assessment

Table 7.1.1 below expands on the district-specific issues listed in Chapter 6 and presents options that Council could introduce to address those issues. The options cover education, regulation and service provision options which then are assessed for alignment with waste minimisation targets, costs and ease of implementation.

Table 7.1.1 Options Assessment

Issue	Description	Approach	Options	Aligns with waste minimisation targets	Cost	Ease of implementation	Commentary
1. Volume of waste disposed fluctuates with economy	The overall volume of waste has increased as a result of economic growth and in response to significant events. There is a need to introduce systems to support a circular economy, ensuring waste remains a resource and disposal volumes reduce, even during periods of economic growth.	Influence	1.1 Establish a business waste minimisation programme with the waste industry and commercial business to drive circular economy initiatives. 1.2 Adopt a proactive and collaborative approach to work with the construction and demolition industry and customers to change behaviours through education to promote waste separation, recycling of materials and beneficial reuse.	Low	Low	Relatively simple	Lead initiatives to promote the establishment of business waste minimisation programmes and local circular economy initiatives. Embed initiatives that support the waste hierarchy (reduce, reuse, recycle) so when economic growth occurs end-end systems are in place to support waste diversion and beneficial use, instead of disposal. Council can support industry groups that are working with the building industry to try and reduce waste from residential builds and larger construction firms to do the same for commercial builds.
			1.3 For rural waste, adopt a proactive and collaborative approach working with Ministry for the Environment and private sector parties, such as AgRecovery and Federated Farmers, on farm waste management to address the potential for harm to the environment and adverse community health effects.	Medium	Low	Simple	Look to adopt NZ Rural Waste Minimisation Project guidelines and work with the industry to improve farm practices. This would include providing information on disposal options from recognised good practice disposal operators.
		Regulate	1.4 Investigating the adoption of a bylaw prohibiting disposal of certain waste streams in landfill and prohibiting disposal and burning of specific waste streams on property that are not currently prohibited.	Low	High	Complex	Likely to be significant opposition to this initiative. Would need to have an alternative processing solution in place before any bylaw was introduced. Appropriate alternative disposal facilities would need to be provided before this option would proceed. Could possibly lead to an increase in illegal dumping if cost effective alternatives are not in place. The quantum of the problem of divertible waste being sent to landfill and on property waste disposal or burning would need to be quantified in order to determine whether the level of effect/benefit is commensurate with the high costs to develop the bylaw, undertake consultation, hearings and socialisation of the final bylaw if adopted. This option would have compliance/monitoring costs that would need to be funded.
		Service	1.5 Further enhance the regional waste database to inform regional waste strategies (covering all regional disposal facilities such as other cleanfill facilities, construction and demolition wastes).	Low	Low	Relatively Simple	Council only has robust information regarding council services and Southland Regional Landfill. Details about other disposal facilities and on-property facilities is not known. Therefore, the total volume of waste material (especially rural and commercial waste) is unknown. More robust and comprehensive data helps to inform robust strategy and planning. Changes in rural and commercial waste streams can have a significant impact on regional waste to landfill volumes.
			1.6 Provide separate waste stream disposal facilities at existing transfer stations.	Medium	Medium	Relatively Complex	Council to support product stewardship schemes, provide sites at existing transfer stations. Simple improvements could be made at existing transfer stations to divert specific waste streams from local industry and commercial business, as well as domestic customers. Further investigation into potential volumes and specific site constraints will be required to determine the viability of this option. Public safety, safe storage and management of potentially hazardous and odorous materials need to be considered.
			1.7 Provide or support the provision of waste drop off points or events (e-waste, hazardous waste, or rural waste).	Medium	High	Complex	The provision of drop off points will require careful assessment of health and safety matters. Drop off points can attract illegal dumping if not well managed. Council may be best to support and promote the provision of such drop-off facilities and services by service providers rather than provide these services.
			1.8 Establish regional facilities (hub and spoke model) to support the circular economy initiatives, promote product stewardship, reuse of material, local processing of different waste streams (such as bulky items, construction and demolition, rural waste).	Medium	High	Complex	Due to potentially high capital cost further investigation into viable options is required. Options may include investment into a regional facility with sort lines/ processing to separate specific waste streams. This initiative would need the support of local industry, business and potentially charitable trusts to be successful. Further analysis of specific waste stream diversion and reuse options is required, such as high volumes of organic material, glass going to cleanfill, construction and demolition, farm waste product stewardship initiatives.

Issue	Description	Approach	Options	Aligns with waste minimisation targets	Cost	Ease of implementation	Commentary
2. High volume of divertible material disposed through transfer stations	Dry recyclables, construction and demolition waste and re-usable items are disposed at transfer stations by both residential and commercial customers, when they could be reduced, reused, or recycled. There is an opportunity to further promote the use of existing diversion options and provide more options to separate waste streams at transfer stations.	Influence	2.1 Provide advice to customers at the waste disposal point to encourage diversion.	Medium	Low	Relatively Simple	This could include the provision of an education service at existing transfer stations that encourages users to recycle and would therefore be relatively simple to implement.
		Regulate	2.2 Investigating the adoption of a bylaw prohibiting disposal of certain construction and demolition materials in landfill and cleanfills.	Medium	High	Complex	The size of the problem would need to be quantified in order to determine whether the level of effect/benefit is commensurate with the high costs to develop regulations, undertake consultation, hearings and socialisation of the final regulations if adopted. This option would have compliance/monitoring costs that would need to be funded.
			2.3 Restrict/ban specific types of waste in kerbside rubbish collection bins.	Medium	High	Complex	While simple in theory, this option will have compliance/ monitoring costs that exceed the benefit of the waste diversion. This is because the source of the non-compliance will be difficult to determine with certainty required to enable infringement notices/fines to be issued. Formalising this and ensuring compliance for both private collectors and Council would be complex. There will be high costs associated with the drafting of the appropriate policy/bylaw, consultation, hearings and socialisation of such a ban. Private collectors and Council already have a 'ban' on liquids, hot ashes, hazardous wastes and medical waste (and sharps in Council bags).
			2.4 Developing and enacting cleanfill regulation at a regional level.	Medium	High	Complex	The size of the problem would need to be quantified in order to determine whether the level of effect/benefit is commensurate with the high costs to develop regulations, undertake consultation, hearings and socialisation of the final regulations if adopted. This option would have compliance/monitoring costs that would need to be funded.
		Service	2.5 Establish construction and demolition recovery facility or partner with industry to provide C&D recovery solutions.	High	High	Complex	Significantly increase opportunities for diversion and the range and quality of diverted materials. Significant capital work required: complex sorting line to operate and maintain, and markets for larger quantity of diverted materials would need to be managed.
			2.6 Support the use of apps (Civil Share) and events where unused construction materials can be sold/ reused.	High	Low	Simple	Promoting existing initiatives to divert unused construction materials is an easy way to prevent construction and demolition materials from landfill or cleanfill.
3. High volume of organic waste going to landfill	There is no end-to-end processing solution for organics in the Southland region and no stable end market for organics processing products. Organic waste includes food waste, green waste, biosolids and other special wastes.	Influence	3.1 Work collaboratively with industry and customers to develop organic waste solutions at a regional level.	High	Low	Relatively simple	Working across the region will have benefits in developing a regional solution for organic waste. Council can support industry groups and key stakeholders to drive initiatives that derive the most beneficial use from a range of organic material. Councils can continue to support education programmes for residents to reduce food waste and home compost. Continue existing education programmes such as "Love Food Hate Waste New Zealand." Lead initiatives to promote waste reduction and separation of food waste from local businesses.
		Regulate	3.2 Investigating the adoption of a bylaw prohibiting disposal of organic waste to landfill.	Low	High	Complex	Likely to be significant opposition to this initiative. Would need to have an alternative processing solution in place before any bylaw was introduced. The size of the problem would need to be quantified in order to determine whether the level of effect/benefit is commensurate with the high costs to develop regulations, undertake consultation, hearings and socialisation of the final regulations if adopted. This option would have compliance/monitoring costs that would need to be funded.
		Service	3.3 Provide a separate organic collection service.	Medium	High	Complex	Significantly increase opportunities for diversion of organic material particularly food waste. Significant capital work required and additional operational cost. Full cost benefit analysis required as to whether this is an appropriate response (this option to be consistent with outcome of MfE collection service review).
			3.4 Establish organic processing facility or partner with industry to provide organic processing solutions.	Low	High	Complex	This option would require consultation, education, and a full cost benefit analysis as to whether this was an appropriate response.

Issue	Description	Approach	Options	Aligns with waste minimisation targets	Cost	Ease of implementation	Commentary
4. Lack of resilience in recycling system	The resilience of the New Zealand recycling system has been tested in recent years, starting with the impact of China's National Sword policy on the availability of end markets for recyclables and more recently with the impact of Covid-19 on the ability to deliver recycling services during a pandemic response. There is a need to provide a more stable recycling system in the region.	Influence	4.1 Advocate to national authorities to develop stable recycling systems that produce high quality material through the collection system and onshore processing.	Low	Low	Complex	Continue to contribute to national and regional policy development, advocate to ensure Southland issues are addressed and are reflected in legislation changes.
			4.2 Establish business waste education and minimisation programmes.	Low	Low	Relatively Simple	Establish a business waste minimisation education and support programme that targets how local business can reduce, reuse and recycle waste.
		Service	4.3 Enhance, provide or support the provision of recycling drop-off points or events (e.g. glass bottle banks, bulk cardboard bins at Transfer Stations).	Medium	Medium	Relatively Simple	Provide consistent recycling drop-off services across the region. Extend the type of recycling and diverted material that can be dropped-off at existing recycling facilities or provide pop-up events for remote areas.
5. Glass recovery	Due to high logistic cost, most glass captured within Southland is sent to cleanfill rather than beneficial use. The introduction of a container return scheme would impact glass recycling/ reuse systems.	Influence	5.1 Advocate to national authorities to develop a stable glass reuse solution. This may include the introduction of a container return scheme.	Low	Low	Complex	Continue to contribute to national and regional policy development, advocate to ensure Southland issues are addressed and are reflected in legislation changes.
		Service	5.2 Provide separate kerbside glass recycling bin.	High	High	Complex	Separating glass from other commingled dry-recycling will increase the value of paper, cardboard and plastics while enabling the glass to be fully recycled back into glass bottles, however providing a separate collection service could be costly with only a minor financial benefit (from increased recycling revenue). This option would clearly align with strategic goals and objectives, however, would require consultation, education, and a full cost benefit analysis as to whether this was an appropriate response.
6. Cost and volume uncertainty due to legislation change	Significant national regulation changes are likely to occur in this WMMP planning cycle. These include an increase in the Waste Disposal Levy and an increase in price of NZ Units in the Emissions Trading Scheme. The possible introduction of a container return scheme and other product stewardship schemes may impact kerbside bin composition and transfer station composition. At the same time, these changes present opportunities for the development of regional waste infrastructure to support these national changes.	Influence	6.1 Advocate for changes, providing a Southland perspective.	Low	Low	Relatively Simple	Continue to contribute to national and regional policy development, advocate to ensure Southland issues are addressed and are reflected in legislation changes.
		Regulate	6.2 Review bylaw to make sure they are consistent with national legislation.	Low	High	Relatively Complex	Continue to review local and regional waste bylaws and policies to ensure they are consistent with National guidelines and legislation. This would apply following the introduction of a national collection standard or container return scheme.
		Service	6.3 Introduce diversion services and facilities to minimise the cost impact.	High	High	Complex	As cost of landfill disposal increases, look to introduce additional diversion options to reduce the cost impact. Provide regional facilities and consistent services that support the cost-effective diversion of material from landfill.

Issue	Description	Approach	Options	Aligns with waste minimisation targets	Cost	Ease of implementation	Commentary
7. **Community engagement networks are not big enough**	Waste minimisation requires all Southlanders to understand the importance of the circular economy and make good decisions about how they manage their resources and waste. There is a need to make sure the communication network is broad enough to influence all parts of the community. Although WasteNet has well-established channels for engaging with residents, there is a need to increase engagement with commercial waste generators.	Influence	7.1 Regularly review and extend existing communication and education channels to engage with a wider stakeholder group on waste minimisation.	Low	Low	Simple	Review WasteNet's existing communication and engagement strategy to ensure the full range of communication tools has been considered on a regular basis. Broaden WasteNet's network to influence behaviour across all parts of the community.
		Service	7.2 Employ a person to drive communication and engagement programmes.	Medium	Medium	Relatively simple	Develop and deliver waste education and engagement programmes. Develop criteria to measure the success of programmes implemented.

8 STATEMENTS OF PROPOSAL

In looking at options for meeting future demand the WasteNet Councils will continue with their current waste minimisation actions (i.e. the status quo) including the continued support and provision of educational programmes. The WasteNet Councils will also continue to support existing waste minimisation and resource efficiency initiatives, advocate to government for change, maintain the existing transfer station facilities and collaborate with other councils to promote waste management and minimisation.

The Southland Regional Landfill (SRL) is expected to meet the Southland region's residual waste needs until the end of its consent in 2040, along with other consented cleanfill disposal sites within the Region.

The WasteNet Councils (Invercargill City, Gore District and Southland District Councils) will review and implement the options to address the Southland - specific issues. In addition, the Councils propose to continue providing the following waste management and minimisation services:

Reduce

- The WasteNet Councils will continue to provide a variety of communication, education and behaviour change programmes targeted toward schools, businesses, the wider community and the Councils' own activities.

Re-use

- The WasteNet Councils will continue to promote re-use opportunities such as promotion of inorganic collection, promotion of applicable product stewardship schemes including a potential national Container Return Scheme, investigation of upgrading transfer stations to resource recovery parks, promotion of C&D waste recovery options, and research into barriers to repairing or re-using goods.

Recycle

- The WasteNet Councils will continue to provide, and in some cases extend, kerbside recycling services to selected properties.
- The WasteNet Councils will continue to provide access to public recycling centres distributed throughout the region.
- The WasteNet Councils will continue to promote separation of recycling from waste and facilitate this at transfer stations with the purpose of increasing recycling rates at the facilities.
- The WasteNet Councils will continue to ensure recycling services are resilient and achieve greatest benefit from diverted material.

Recovery

- The WasteNet Councils will continue to explore options to assess how organic materials can be better managed within the region.

Treatment

- The WasteNet Councils will continue to promote responsible hazardous waste collection and disposal within the region.
- The WasteNet Councils will continue to promote product stewardship options for problem wastes such as agricultural chemicals and e-wastes.

Dispose

- The WasteNet Councils will continue to ensure a regular landfill-rubbish collection service is available to households and the public including access to the Councils' transfer stations or drop-off facilities and ensure appropriate disposal at the Southland Regional Landfill.

8.1 Jointly or individually delivered waste services

The WasteNet Councils already provide similar services to ratepayers and residents in each area and have shared services for waste disposal under regional contracts. When the WasteNet Councils are assessing service delivery options there are several factors which impact on whether a service is considered best provided jointly by the WasteNet Councils or on an individual basis.

Some of these factors include:

- **Economies of scale** which may include consideration of factors such as whether there are:
  - cost savings to be made
  - increased size of contracts may attract new collectors to this market – potentially increasing competition
  - competition in the market - other players in the market that may compete against the Councils for customers and thus influence the Councils' market share, and
  - opportunities available jointly to procure better technology/plant for completion of the services.
- **Revenue increases and surety of revenue** can occur if the Councils work jointly but will not necessarily occur if they continue to work individually. One observation is that transfer station gate prices are variable across the region. Further opportunity exists to provide uniform charging and increase the cost of disposal as a disincentive to dispose of waste to landfill. If only one of the Councils raises prices at its transfer stations, this risks resulting in waste flight and reduced tonnages/revenue in favour of the adjacent Council's transfer stations. Although this may be unlikely with the distances that have to be travelled.
- **Innovation** can occur when the size and scope of services increase allowing for additional investment and market players to enter the market.
- **Efficiencies for each Council** in terms of people and budget resources required to manage the waste services/policy development. Efficiency is most likely to occur when the Councils work jointly and rationalise resources required.
- **Levels of service** provide consistency in the marketplace and result in less confusion for residents. In order for the Councils to provide similar levels of service, their current policy differences need to be reviewed and policy developed taking into account joint considerations.
- **Contract efficiencies.** If the Councils procure services jointly there is the opportunity for efficiencies to occur in contracted services, e.g. a contractor may only require one depot instead of one for each district and require only one back-up truck to service more than one district. Contract management costs to the Councils could also reduce should the Councils' contract manage the services jointly.

A Section 17A review was completed in May 2016 and the status quo shared service option (WasteNet Southland shared service) scored the highest. Section 17A reviews are required within two years of contracts expiring, when changes are proposed to levels of services and at least every six years. The review of the regional Waste Assessment and Southland Waste Management and Minimisation Plan will trigger the need to revisit the review and confirm that the WasteNet shared service remains the preferred delivery mechanism.

9 STATEMENT OF PUBLIC HEALTH PROTECTION

The draft Waste Assessment has to be sent for comment to the Medical Officer of Health for the District.

Comments received are included in Appendix A.

10 APPENDICES

Appendix A – Letter from Medical Officer of Health

Appendix B – Composition of Solid Waste in Southland June 2018

Appendix C – Rethinking Rubbish and Recycling – Southland Region

Appendix D – Legislation

Appendix E – Waste Data by Council

Appendix A Letter from Medical Officer of Health

[Insert letter from Medical Officer of Health after review]

Appendix B Composition of Solid Waste in Southland June 2018

[Insert Composition of Solid Waste in Southland June 2018 report]

Appendix C Rethinking Rubbish and Recycling – Southland Region

[Insert Rethinking Rubbish and Recycling – Southland Region report]

Appendix D Legislation

The Waste Minimisation Act (WMA) 2008

The enactment of the WMA in 2008 represented a change in the Government's approach to managing and minimising waste. The WMA recognises the need to focus efforts higher on the waste hierarchy in terms of reducing and recovering waste earlier in its lifecycle, shifting focus away from treatment and disposal. The purpose of the WMA (s3) is to *"encourage waste minimisation and a decrease in waste disposal in order to protect the environment from harm; and to provide environmental, social, economic and cultural benefits".*

The WMA introduced a number of useful tools such as a framework for developing accredited product stewardship schemes and the creation of a national waste disposal levy.

Central Government has a waste programme to drive national waste sector improvements. Consultation is underway regarding priority products, and an increase in the Waste Disposal Levy and Emission Trading Scheme (ETS). Work is also underway to design a national Container Return Scheme and standardising kerbside collections in conjunction with national investment plans. The impact of these changes on future demand for waste services is discussed in Chapter 5.

While the WMA provides many benefits to local councils, it also provides a number of responsibilities. Part 4 is fully dedicated to the responsibilities of Territorial Authorities which *"must promote effective and efficient waste management and minimisation within their districts"* (s42).

Climate Change Response Act 2002 and the Climate Change Response (Zero Carbon) Amendment 2019

The Climate Change Response Act 2002 and 2019 amendment provides the basis for a New Zealand Greenhouse Gas Emission Trading Scheme (ETS). The Act requires landfill owners to purchase emission trading units to cover methane emissions generated from their landfill. Should any future solid waste incineration plants be constructed, the Act would also require emission trading units to be purchased to cover carbon dioxide, methane, and nitrous oxide emissions from the incineration of household wastes.

The legislative framework in relation to climate change continues to evolve with new legislation introduced in 2019. The impact of increased charges is covered in Chapter 5.

The Local Government Act 2002 (LGA 2002)

This Act requires Territorial Authorities to assess how well they provide collection and reduction, reuse, recycling, recovery, treatment and disposal of waste in their district, and makes Territorial Authorities responsible for the effective and efficient implementation of their WMMP.

The LGA 2002 contains various provisions that may apply to Territorial Authorities when they are preparing their WMMPs, including consultation (Part 8, sections 145-146) and bylaw provisions (Part 8, section 158). The procedure for making a bylaw and the requirement for completing a special consultative procedure, when making a bylaw, are contained in sections 155 and 156.

The LGA 2002 (Part 6, section 77) refers to legislative requirements for Territorial Authority decision-making, including consideration of the benefits and costs of different options in terms of the present and future social, economic, environmental and cultural wellbeing of the district. Schedule 10 of the Act also includes requirements for information to be included in a Long Term Plan (LTP), including summary information about their WMMP.

The Resource Management Act 1991 (RMA)

The RMA provides guidelines and regulations for the sustainable management of natural and physical resources. Although it does not specifically define 'waste', the Act addresses waste management and minimisation activity through controls on the environmental effects of waste management and minimisation activities and facilities through national, regional and local policy, standards, plans and consent procedures.

In this role, the RMA exercises considerable influence over facilities for waste disposal and recycling, recovery, treatment, and others in terms of the potential impacts of these facilities on the environment.

Under section 30 of the RMA, regional councils are responsible for controlling the discharge of contaminants into or onto land, air or water. These responsibilities are addressed through regional planning and discharge consent requirements. Other regional council responsibilities that may be relevant to waste and recoverable materials facilities include managing the adverse effects of storing, using, disposing of, and transporting hazardous wastes; the dumping of wastes from ships, aircraft and offshore installations into the coastal marine area; and the allocation and use of water.

Under the RMA, Territorial Authority responsibility includes 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 involved in the disposal, treatment or use of waste or recoverable materials may carry this potential. Permitted, controlled, discretionary, non-complying and prohibited activities and their controls are specified within district planning documents, thereby defining further land-use-related resource consent requirements for waste-related facilities.

In addition, the RMA provides for the development of national policy statements and for the setting of National Environmental Standards (NES). There is now a National Policy Statement on Renewable Electricity Generation, which is defined as 'generation of electricity from solar, wind, hydro, geothermal, biomass, tidal, wave, or ocean currents resources. This is also relevant to the Waste Assessment as organic and green waste can be defined as forms of biomass, and therefore a source of renewable electricity generation.

There is currently one enacted NES that directly influences the management of waste in New Zealand – the Resource Management (National Environmental Standards Relating to Certain Air Pollutants, Dioxins, and Other Toxics) Regulations 2004 (the NES for Air Quality). This NES requires certain landfills (e.g. those with a capacity of more than 1 million tonnes of waste) to collect landfill gases and either flare them or use them as a source of energy. The result is increased infrastructure and operational costs for qualifying landfills, although with costs potentially offset by the harnessing of captured emissions for energy generation.

Unless exemption criteria are met, the NES for Air Quality also prohibits the lighting of fires and burning of waste at landfills, the burning of tyres, bitumen burning for road maintenance, burning coated wire or oil, and the operation of high-temperature hazardous waste incinerators. These prohibitions limit the range of waste treatment/disposal options available within New Zealand with the aim of protecting air quality.

Other legislation

The following is a summary of other legislation that is to be considered with respect to waste management and minimisation planning.

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

The HSNO Act addresses the management of substances that pose a significant risk to the environment and/or human health, from manufacture to disposal. The Act relates to waste management primarily through controls on the import or manufacture of new hazardous materials and the handling and disposal of hazardous substances.

Hazardous substances may be explosive, flammable, have the capacity to oxidise, be toxic to humans and/or the environment, corrosive, or have the ability to develop any of these properties when in contact with air or water. Depending on the amount of a hazardous substance on site, the HSNO Act sets out requirements for material storage, staff training and certification. These requirements would need to be addressed within operational and health and safety plans for waste facilities. Hazardous substances commonly managed by councils include used oil, asbestos, agrichemicals, LPG and batteries.

The HSNO Act provides minimum national standards that may apply to the disposal of a hazardous substance. However, under the RMA a regional council or Territorial Authority may set more stringent controls relating to the use of land for storing, using, disposing of or transporting hazardous substances.

The Health Act 1956

The Health Act 1956 places obligations on Territorial Authorities (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, s 25). It specifically identifies certain waste management practices as nuisances (s 29) and offensive trades (Third Schedule). The Health Act enables Territorial Authorities to raise loans for certain sanitary works and/or to receive government grants and subsidies, where available.

The Health Act provisions for the removal of refuse by local authorities have been repealed by local government legislation. The Public Health Bill is currently progressing through Parliament. It is a major legislative reform reviewing and updating the Health Act 1956, but it contains similar provisions for sanitary services to those currently contained in the Health Act 1956.

The Litter Act 1979

The Litter Act provides Territorial Authorities with powers to create Litter Enforcement Officers or Litter Control Officers who have powers to issue infringement notices with fines for those who have committed a littering offence.

The Litter Act was amended on 27 June 2006. The principal amendment was to strengthen the powers of Territorial Authority infringement fees, which are now increased from the original $100 to a maximum of $400. Territorial Authorities may adopt the amended infringement notice provisions provided they pass a new resolution including the 14 days' public notification.

Councils use the Litter Act as a method for regulating litter and illegal dumping although the enforcement process is difficult and often unsuccessful. There have been very few successful prosecutions in New Zealand under the Litter Act. It is accepted that prosecuting litter offenders through the courts is not the most efficient way of dealing the litter problem as the fines imposed are not high enough to act as a deterrent and full costs are usually not recovered.

The Health and Safety at Work Act 2015 (HSWA)

The Health and Safety at Work Act 2015 sets out the principles, duties and rights in relation to workplace health and safety. The HSWA outlines health and safety responsibilities for the management of hazards in relation to employees at work. This could potentially include working with hazardous substances and in the collection and management of waste.

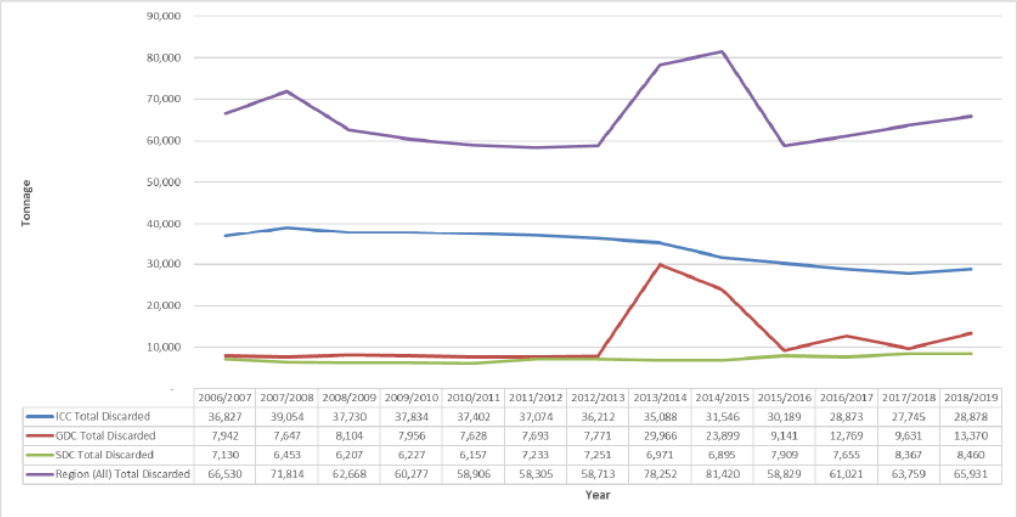
The HSWA requires employers to identify and manage hazards present in the workplace, provide adequate training and supervision, and supply appropriate protective equipment. Employers must take all practicable steps to ensure the safety of employees while at work, and in particular must take all practicable steps to (among other things) ensure employees are not exposed to hazards arising out of the arrangement, disposal, organisation, processing, storage, transport or use of things in their place of work.

The HSWA places duties on any person in control of a place of work, (e.g. a principal), to ensure that people are not harmed by any hazard resulting from work activities. Those who employ contractors therefore *"have the same occupational health and safety obligations to contractors or contracted labour as they do their own employees"*. Employers therefore need to establish systems to manage the health and safety of any contractors or contracted labour.

Principals cannot contract out of their responsibilities for health and safety through contract disclaimer clauses. From discussions with council waste officers, it is believed that council staff are aware that the council is principal to the contract and that they take health and safety responsibilities seriously. At the time services are procured, many councils now require robust data and information (including health and safety) to ensure that they can make a considered choice of future collection methodology.

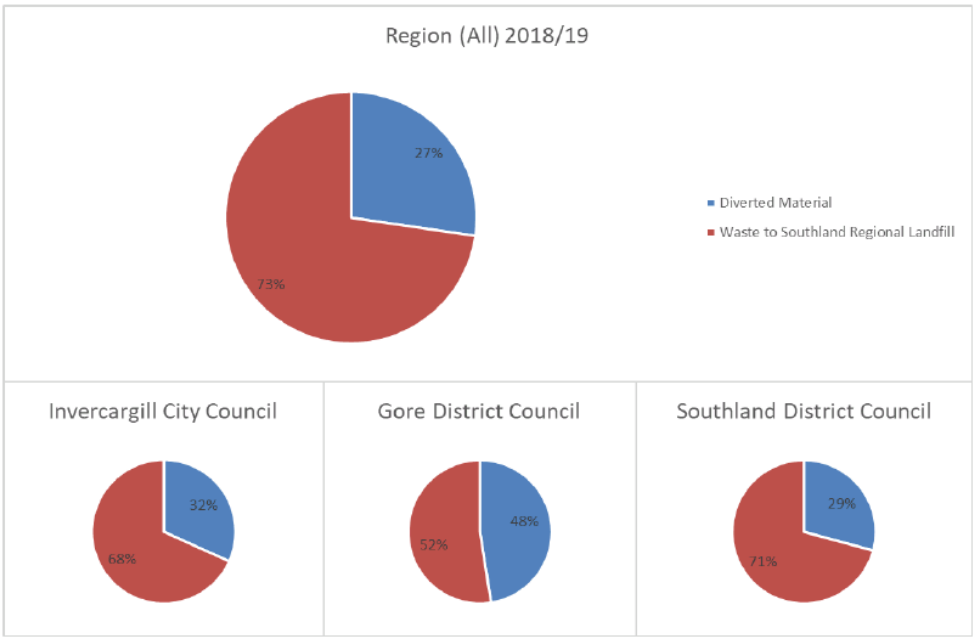
Appendix E Additional Council-specific data

Total tonnage of materials discarded by District in Southland Region (July 2006 to June 2019) (refer Section 3.3)

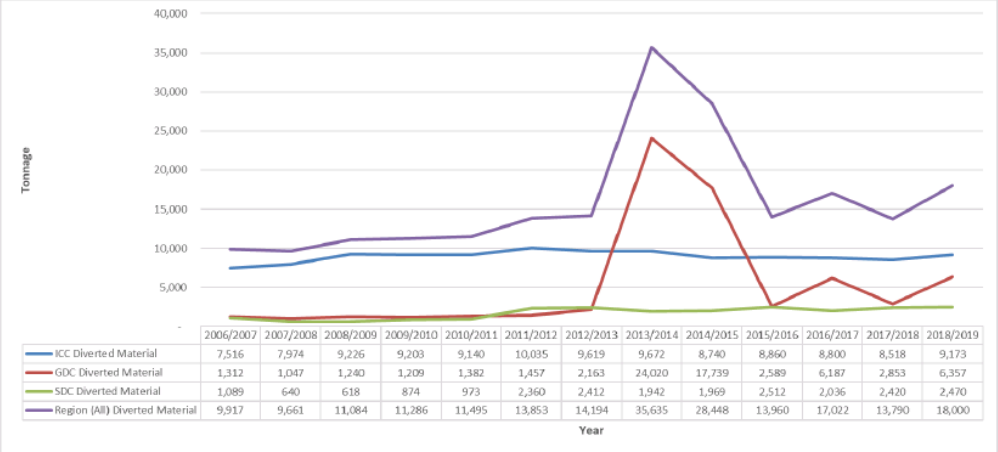


	2006/2007	2007/2008	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019
ICC Total Discarded	36,827	39,054	37,730	37,834	37,402	37,074	36,212	35,088	31,546	30,189	28,873	27,745	28,878
GDC Total Discarded	7,942	7,647	8,104	7,956	7,628	7,693	7,771	29,966	23,899	9,141	12,769	9,631	13,370
SDC Total Discarded	7,130	6,453	6,207	6,227	6,157	7,233	7,251	6,971	6,895	7,909	7,655	8,367	8,460
Region (All) Total Discarded	66,530	71,814	62,668	60,277	58,906	58,305	58,713	78,252	81,420	58,829	61,021	63,759	65,931

Composition of materials discarded by the Councils in the Southland Region (July 2018 to June 2019) (refer Section 3.3)

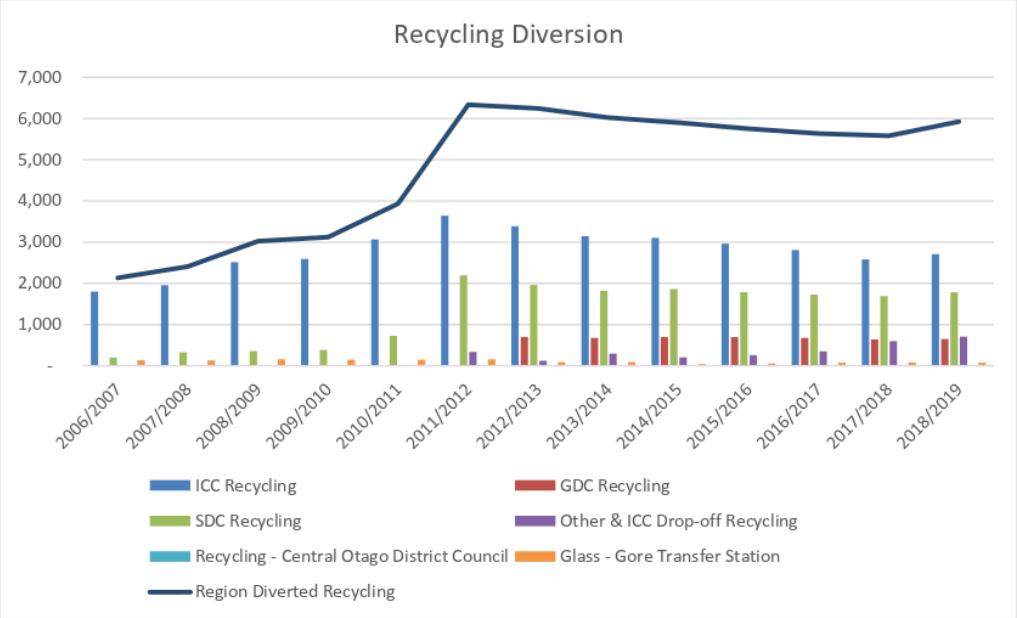


Tonnage of diverted material by the Councils in the Southland Region (July 2006 to June 2019) (refer Section 3.4)

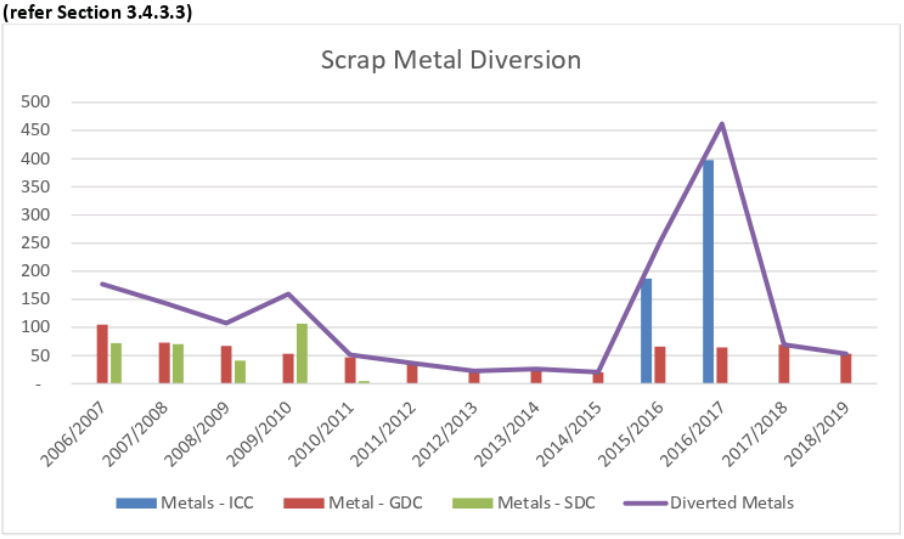


	2006/2007	2007/2008	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019
ICC Diverted Material	7,516	7,974	9,226	9,203	9,140	10,035	9,619	9,672	8,740	8,860	8,800	8,518	9,173
GDC Diverted Material	1,312	1,047	1,240	1,209	1,382	1,457	2,163	24,020	17,739	2,589	6,187	2,853	6,357
SDC Diverted Material	1,089	640	618	874	973	2,360	2,412	1,942	1,969	2,512	2,036	2,420	2,470
Region (All) Diverted Material	9,917	9,661	11,084	11,286	11,495	13,853	14,194	35,635	28,448	13,960	17,022	13,790	18,000

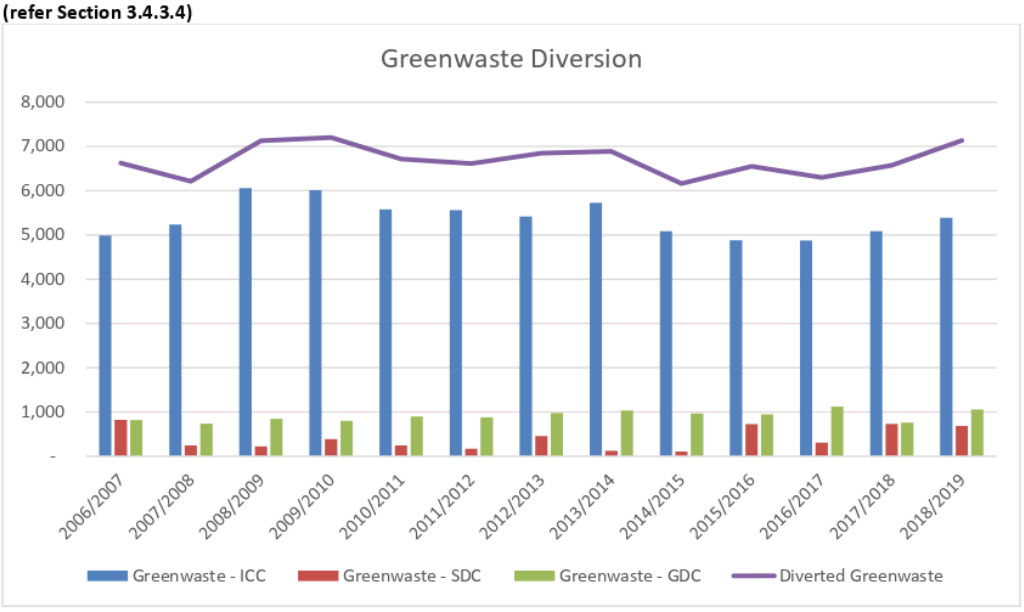
Comparison of recycling diversion by the Councils in the Southland Region (July 2006 to June 2019) (refer Section 3.4.3.2)



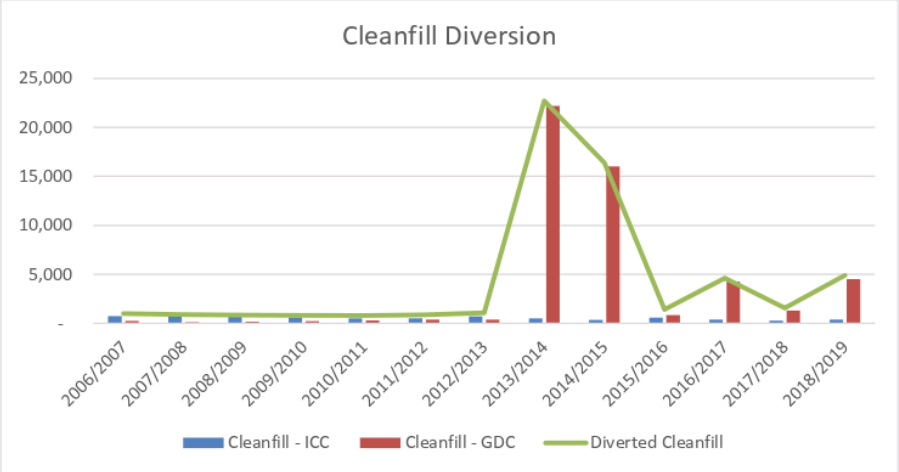
Comparison of scrap metal diversion by the Councils in the Southland Region (July 2006 to June 2019) (refer Section 3.4.3.3)



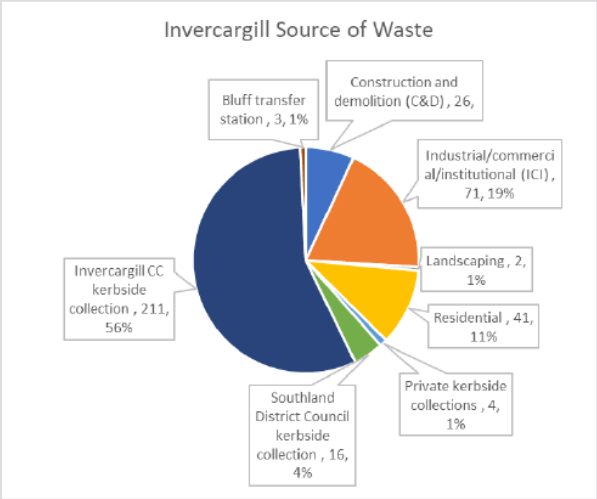
Comparison of green waste diversion by the Councils in the Southland Region (July 2006 to June 2019) (refer Section 3.4.3.4)



Comparison of cleanfill diversion by the Councils in the Southland Region (July 2006 to June 2019) (refer Section 3.4.3.5)



Tonnage and source of overall waste stream entering Invercargill City Council operated Transfer Stations (April 2017 to April 2018) (Section 3.5)

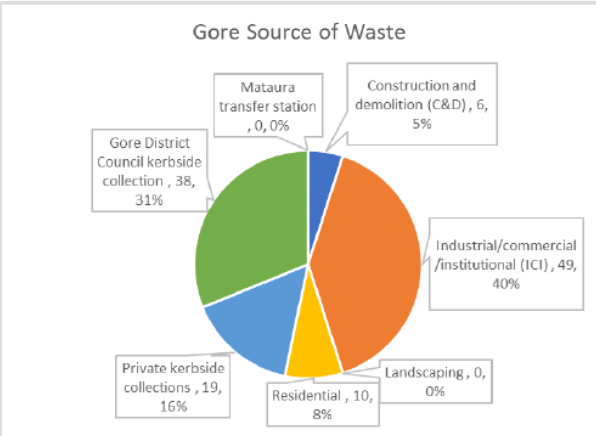


Activity source of overall waste - Invercargill RTS - 1-28 April 2018	Tonnes/week 2018	Tonnes/week 2011
Construction and demolition (C&D)	26	50
Industrial/commercial/institutional (ICI)	71	164
Landscaping	2	6
Residential	41	36
Subtotal - General waste	**139**	**256**
Private kerbside collections	*4*	*10*
Southland District Council kerbside collection	*16*	*16*
Invercargill CC kerbside collection	*211*	*205*
Subtotal - Kerbside collections	**230**	**231**
Bluff transfer station	3	6
TOTAL	**372**	**493**

Waste to landfill from Invercargill City	2017/18	2011
Waste from Invercargill RTS to SRL	370 T/week	493 T/week
Special wastes from Invercargill City to SRL	**plus 50 T/week**	**plus 10 T/week**
ICI wastes from Invercargill City direct to SRL	**plus 133 T/week**	**plus 34 T/week**
Kerbside collections from Southland District to Invercargill RTS	less 16 T/week	less 16 T/week
Total	**537 T/week**	**521 T/week**

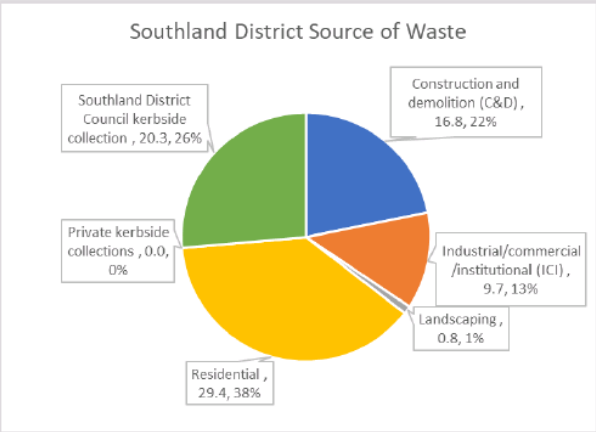
Source: Composition of Solid Waste in Southland region 2018, Waste Not Consulting.

Tonnage and source of overall waste stream entering Gore District Council operated Transfer Stations (April 2017 to April 2018) (Section 3.5)



Activity source of overall waste - Gore RTS - 21 May - 3 June 2018	Tonnes/week 2018	Tonnes/week 2011
Construction and demolition (C&D)	6	3
Industrial/commercial/institutional (ICI)	49	43
Landscaping	0	0
Residential	10	16
Subtotal - General waste	**65**	**62**
Private kerbside collections	*19*	*38*
Gore District Council kerbside collection	*38*	*8*
Subtotal - Kerbside waste collections	**57**	**46**
Mataura transfer station	0	2
TOTAL	**122**	**111**

Tonnage and source of overall waste stream entering Southland District Council operated Transfer Stations (April 2017 to April 2018) (Section 3.5)



Activity source of overall waste - Southland District RTS - April - June 2018	Tonnes/week 2018	Tonnes/week 2011
Construction and demolition (C&D)	17	11
Industrial/commercial/institutional (ICI)	10	5
Landscaping	1	0
Residential	29	13
Subtotal - General waste	**57**	**30**
Private kerbside collections	0	9
Southland District Council kerbside collection	20	20
Subtotal - Kerbside waste collections	**20**	**28**
TOTAL	**77**	**58**