ASSET MANAGEMENT PLAN

RESOURCE RECOVERY

OVERVIEW

ASSET MANAGEMENT PLAN
EXECUTIVE SUMMARY **RESOURCE RECOVERY**

Manaaki whenua, manaaki tangata, haere whakamua.
Tihei mauri ora!

No reira, e te haukainga Rangitāne, nei rā te mihi nui ki a koutou e pupuri nei i te mauri o te whenua me ngā wai e rere atu e rere mai.

Tēnā koutou, tēnā koutou, tēnā tātou katoa.

Most of the things we do, buy, and consume generates some form of waste. This not only costs money when we throw things away but, if we do not manage the waste properly, it can cause problems with the environment and with people's health.

We provide rubbish collection and recycling services for the City in order to:

- Ensure the city's solid waste is adequately and affordably managed;
- Maximise the amount of waste diverted from landfill (such as through recycling and composting); and
- Manage hazardous waste in an environmentally responsible manner.

Our waste management and minimisation plan guides our work

We are required by the Waste Minimisation Act 2008 to adopt a Waste Management and Minimisation Plan (WMMP) that sets out our objectives, policies and methods for achieving effective and efficient waste management and minimisation, and how the plan is to be funded. We reviewed and updated the WMMP in December 2019 and identified four priority actions, three of which are likely to require infrastructure.

We also receive funds from the national waste disposal levy to spend on promoting or achieving the waste minimisation activities set out in our WMMP.

We are also guided by the Resource Recovery Plan which is our tactical response to the Goal 4: An Eco City and the Eco City Strategy.

This Asset Management Plan outlines how we manage our Resource recovery activity, what our challenges are and our investement plan for the next 30 years.

We can be a leader in waste diversion

In 2017, Palmerston North sent just over 45,000 tonnes of waste to landfill. Nearly half of this was potentially divertible. While we cannot be directly responsible for all the City's waste, we can promote effective and efficient waste management and minimisation.

There are opportunities for us to invest in new services to increase the proportion of waste diverted from landfill from 38 percent to 48 percent by 2025 as identified in our WMMP .

We could save nearly 20,000 tonnes of material from going into the landfill each year.

Scope of this plan

This Plan informs our 10 Year Plan, Financial Strategy and 30 Year Infrastructure Strategy. It supports us in the management of our Resource recovery activity to:

- Achieve our strategic outcomes as set by Goal 4: An Eco City and the Eco City Strategy
- Meet the levels of service we have committed to;
- Plan for growth and adjust to other drivers such as climate change and new legislation;
- Improve asset knowledge and monitor performance;
- Minimise risk; and
- Plan operations.

WHAT WE PROVIDE

We provide waste minimisation (recycling), waste management (rubbish) and closed landfill management services.

In addition to the services listed below we promote waste diversion through behaviour change campaigns and education.

Service	Typical Usage [Tonnes per year]
Kerbside Comingled Recycling Collections	3800
Kerbside Rubbish Bag Collection	3300
Organic and Green Waste Drop Off Points	2700
Kerbside Glass Recycling Collections	1700
Three Recycling Drop-off Points	1000
Food Waste Collection	380
Public Space Bins	257
Rubbish Transfer Station	118
Illegal Dumping Response	42
Events Recycling	1
Household Chemical Drop Off	1
E Waste	TBA

694 PUBLIC BINS

AWAPUNI CLOSED LANDFILL

MATERIAL RECOVERY FACILITY

3 DROP OFF POINTS

COMPOST WIND ROWS

E-WASTE

COMMERCIAL RECYCLING

COMMERCIAL FOOD WASTE

EVENT RECYCLING

30,621 CRATES FOR GLASS RECYCLING

AROUND 29,000 PROPERTIES USE OUR RUBBISH COLLECTION SERVICE

1456 80L BINS

28,721 240L WHEELIE BINS

EVERYONE IS A CUSTOMER

About a third of residents use our rubbish bag service. These customers are less likely to throw out material that could be recycled.

10 percent of recyclable materials are dropped off. The use of the Ferguson Street Recycling Drop Off Point has tripled in the last five years.

Waste from the CBD has doubled, and we are seeing growth in our commercial food waste, glass and recycling services.

We are collecting less waste from our public space bins, but illegal dumping has increased.

We have worked hard to educate residents on keeping rubbish out of recycling bins but Covid-19 has set us back.

We have supported over 40 events with recycling services – the biggest being the Festival of Cultures.

The 2020 Annual Residents survey found that our residents are generally happy with all aspects of waste management, particularly with kerbside rubbish and recycling collection.

Our stakeholders include: Ministry for the Environment, Ministry of Health, Horizons Regional Council, Neighbouring Local Authorities, Other Waste Collection Providers, Environmental Groups

WE HAVE SOME CHALLENGES + RISKS

We can do better in sorting our waste

The 2017 Waste Assessment provided data on nearly all waste streams for Palmy. This data was analysed and identified the main areas where we could improve our effectiveness in waste diversion. The WMMP was updated to include three priority issues that require new services and infrastructure:

- A significant proportion of waste going to landfill is organic waste, with food waste present across all kerbside rubbish collection systems.
- Lack of facilities to recycle or otherwise divert construction and demolition waste, in particular with a predicted increase in construction activity.
- More recyclables could be diverted from commercial properties.

Waste minimisation mitigates climate change

The government has further incentivised waste reduction by including landfills in the New Zealand Emissions Trading Scheme so the more we can divert from landfill, the greater part we play in reducing green-house gases.

Law changes are imminent but uncertain

Waste management is also a national concern and hence, a key driver of change is new legislation and standards. Central Government has a New Zealand Waste Strategy and is consulting on phasing out some types of unrecyclable (including some polystyrene packaging) and single use plastics. Other changes are more advanced, such as a Container Return Scheme (CRS), increased waste disposal levy and kerbside collection standards (due 2021).

A bevarage container return scheme is on the cards

A major benefit of having our own Material Recovery Centre (MRF) is the ability to separate out high-value commodities. Our MRF also has processing capacity to accommodate growth.

Government has funded the design of a CRS for New Zealand and is now considering next steps. A CRS would not be implemented until 2023 at the earliest. As a result of the CRS, high value plastics and glass could be removed from kerbside collections. Therefore, it is in our interest to investigate how we can be involved in running a CRS locally.

Rubbish disposal will cost us more

It is expected that from July 2021 to 2024, the Waste Disposal Levy will increase from $10 a tonne to $50-$60 a tonne for Class 1 landfills. We will have to pay more for disposing of rubbish in the Bony Glen landfill. Assuming we will continue with the kerbside rubbish collection as a ring-fenced, cost-neutral, user pays service this may result in an increase in the cost of rubbish bags.

Kerbside collections may become standardized

A national review is currently underway into how collections differ around country. The most likely change to impact our services would be the standardisation of products that can be collected in the mixed recycling service. We already collect glass separately which is the other major change expected.

Covid-19 changed behaviour

In 2020 Covid-19 became a significant issue for contamination of waste in our mixed recycling residential wheelie bin service.

In recent years we have worked hard to reduce contamination, but this work was undermined when people started to use the recycling service for disposing waste during Level 4 when we were unable to process the material and had to send it to landfill it for health reasons. Since our normal service has resumed, recycling contamination levels have not returned to previous levels, costing us more to dispose of this waste.

Limited markets for commodities

Another major driver is the change in commodity markets impacting on our ability to divert materials. Since China's "National Sword" policy in 2018 that banned importing of "waste" there has been a dramatic decline in markets willing to pay for recovered materials. We are now paying to supply some commodities instead of selling them. This is increasing our operating costs.

Our closed landfill will continue to play a role

From 1950 to 2007, 2.5 million tonnes of rubbish were deposited at the Awapuni Landfill. Now closed, we have the ongoing responsibility to maintain its integrity. The current consent expires in 2029 and will need to start the process of reconsenting it a couple of years ahead of this.

WHAT'S OUR PLAN?

We plan to provide new services to divert more waste from landfill

Our target is to increase the proportion of waste diverted from landfill from 38 percent to 48 percent by 2025. This will mean a reduction in waste being sent to the landfill and an increase in material being diverted.

Kerbside food waste service (+ 4 percent diversion rate)

We have currently put on hold implementation of a city wide weekly kerbside food waste collection service to households. However we are continuing with an investigation and trial for this service. A tailored service will continue to be offered to those that have larger quantities of food waste such as restaurants, hostels, and cafeterias.

Citywide Recycling Services to Non-Residential Properties (+ 2 percent Diversion Rate)

Provide additional recycling collection services to non-residential customers to accommodate their needs; such as variety in containers, types of materials, frequency of collection and location of collection. These would be provided on a user-pays basis.

Diversion of New Materials from Landfill (+ 2.7 percent Diversion Rate)

This would include investigating the establishment of a construction and demolition waste processing service (with associated collections), aiming to divert at least one third of this waste currently going to landfill. Implementation would be subject to investigation and detailed financial analysis.

Our response to growth

The city has grown further away from our existing recycling drop-off points. We need to investigate establishing a new drop off site for recycling and green waste in the north east of the city to better service this growth.

We will continue to investigate and pilot new services

We will continually adapt to the changing markets and legislative environment and to do this we plan to be:

- Investigating the possibility of recycling difficult materials like polystyrene.
- Continuing education to change behaviour and promote awareness.
- Continuing to take enforcement action against those that dump rubbish illegally, and work in partnership with community group to identify and address problem spots.
- Continuing to support a community led Zero Waste Action Group; and
- Applying our new Bylaw to influence and reduce the amount of materials going to landfill that could have been diverted.

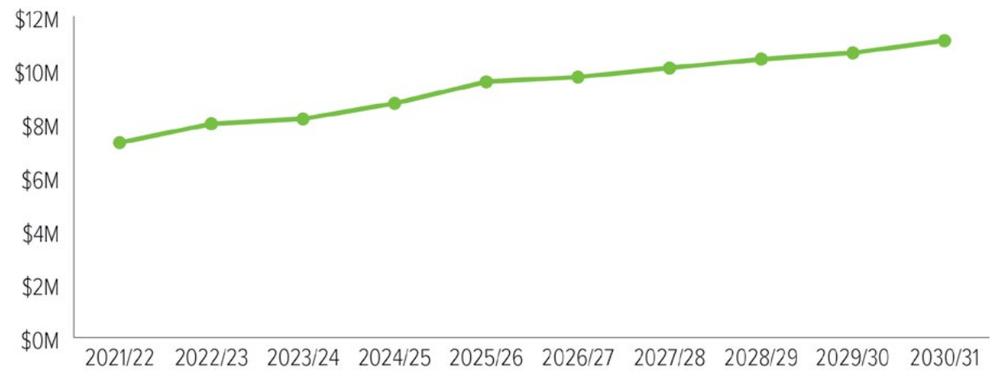
Maintain existing levels of services

We plan to keep operating the existing services at the same level and continue to look for ways to improve operational efficiency.

HOW MUCH WILL IT COST?

The Resource recovery activity is service heavy. With very few assets, this means that most of the expenditure is operational and associated with the collection of rubbish and recycling from around the city.

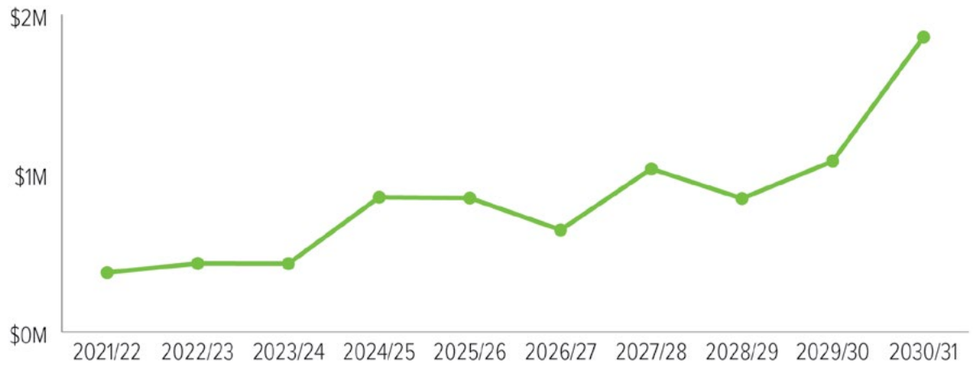
OPERATIONS + MAINTENANCE
RESOURCE RECOVERY ACTIVITY



Operations and maintenance costs are forecast to rise over the coming years as the city grows. It is also becoming more challenging to generate revenue from our recovered materials (not shown in the figure). We have included allowances in our future budgets for these, however the long-term view remains uncertain and these will likely need to be reconsidered in the future.

Approximately half of the $7 million per year spent on operations and maintenance is on the collection and processing of recycling around the city. The next most significant areas of expenditure are in rubbish collection, green waste management and emptying bins in public areas. The remainder of our waste minimisation activities make up only a small portion of the overall operations and maintenance expenditure with approximately $0.1 million spent per year.

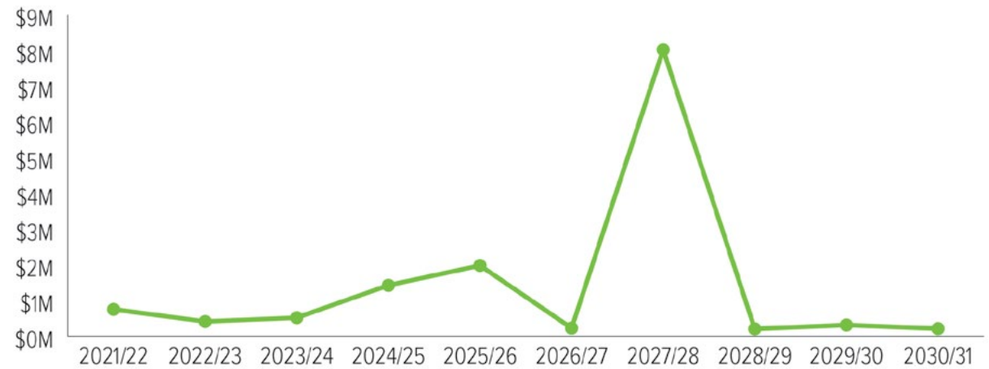
RENEWAL
RESOURCE RECOVERY ACTIVITY



Renewals for the Resource recovery activity are mostly minor renewals at the MRF, recycling drop off points and closed landfill sites. There are also renewals associated with residential bin and crates and public space rubbish and recycling bins. Asset renewals are going to steadily increase over the next 10-years.

The significant increase in later years is primarily associated with an anticipated need to renew residential wheelie bins and crates. There will be many of these assets that are coming towards the end of their expected life. We will continue to reassess the performance of these assets and may adjust the renewal budget should their current condition start to change.

CAPITAL NEW EXPENDITURE
RESOURCE RECOVERY ACTIVITY



There is typically a low level of capital new investment (between $0.2 and $0.6 million) associated with the Resource recovery activity. This is to cover things such as new crates and bins within growth areas of the city, minor development of the Materials Recovery Facility and improvements at our closed landfills.

There are two large projects planned which result in a significant increase in annual expenditure. There is a new Recycling Drop Off Facility planned to be developed in 2024-26 in the Whakarongo and Kelvin Grove area. It is planned to spend $2 million constructing this facility. It is proposed to undertake a significant development at the Materials Recovery Facility in 2027-28 at a cost of $7 million. The project would enable us to utilise the most recent technology to optimise efficiency of the recovery of materials presented for diversion at the Materials Recovery Facility.

This document was prepared by:

Palmerston North City Council | Infrastructure | Asset and Planning Division.

Version No.	Reason for Amendment	Date
0	DRAFT TO SUPPORT 10 YEAR PLAN CONSULTATION	14 Apr 2021
1	FINAL	30 Jul 2021

	Name
Asset Management Plan Coordinator:	Shane Allen
Reviewed by:	Mike Monaghan Natasha Hickmott Mark Read
Approved for Issue by:	Jono Ferguson-Pye

OASIS Document No.	15099603

Contents

Glossary

The following terms and acronyms (in brackets) are used in this Asset Management Plan.

Term or Acronym	Description
Activity	An activity is the work undertaken on an asset or group of assets to achieve a desired outcome.
Advanced Asset Management (AAM)	Asset management practice that has evolved to a state that matches business needs. AAM employs predictive modelling, risk management and optimised renewal decision making techniques to establish asset lifecycle treatment options and related long term cashflow predictions. (See Core asset management).
Annual Budget	The Annual Budget provides a statement of the direction of Council and ensures consistency and co-ordination in both making policies and decisions concerning the use of Council resources. It is a reference document for monitoring and measuring performance for the community as well as the Council itself.
Asset	A physical component of a facility that has value, enables services to be provided and has an economic life of greater than 12 months.
Asset Management (AM)	The combination of management, financial, economic, engineering and other practices applied to physical assets with the objective of providing the required level of service in the most cost effective manner.
Asset Management System (AMS)	A system (usually computerised) for collecting analysing and reporting data on the utilisation, performance, lifecycle management and funding of existing assets.
Asset Management Plan	A plan developed for the management of one or more infrastructure assets that combines multi-disciplinary management techniques (including technical and financial) over the lifecycle of the asset in the most cost effective manner to provide a specified level of service. A significant component of the plan is a long term cashflow projection for the activities.
Asset Management Strategy	A strategy for asset management covering, the development and implementation of plans and programmes for asset creation, operation, maintenance, renewal, disposal and performance monitoring to ensure that the desired levels of service and other operational objectives are achieved at optimum cost.
Asset Management Team	The team appointed by an organisation to review and monitor the corporate asset management improvement programme and ensure the development of integrated asset management systems and plans consistent with organisational goals and objectives.
Asset Register	A record of asset information considered worthy of separate identification including inventory, historical, financial, condition, construction, technical and financial information about each.
Benefit Cost Ratio (B/C)	The sum of the present values of all benefits (including residual value, if any) over a specified period, or the life cycle of the asset or facility, divided by the sum of the present value of all costs.
Business Plan	A plan produced by an organisation (or business units within it) which translate the objectives contained in an Annual Budget into detailed work plans for a particular, or range of, business activities. Activities may include marketing, development, operations, management, personnel, technology and financial planning

Term or Acronym	Description
Capital Expenditure (CAPEX)	Expenditure used to create new assets or to increase the capacity of existing assets beyond their original design capacity or service potential. CAPEX increases the value of an asset.
Cash Flow	The stream of costs and/or benefits over time resulting from a project investment or ownership of an asset.
Components	Specific parts of an asset having independent physical or functional identity and having specific attributes such as different life expectancy, maintenance regimes, risk or criticality.
Condition Monitoring	Continuous or periodic inspection, assessment, measurement and interpretation of resulting data, to indicate the condition of a specific component so as to determine the need for some preventive or remedial action
Core Asset Management	Asset management which relies primarily on the use of an asset register, maintenance history, condition assessment, defined levels of service, and simple risk and benefit/ cost assessments in order to establish work priorities and long term cashflow predictions.
Critical Assets	Assets for which the financial, business or service level consequences of failure are highest. Critical assets have a lower threshold for action than non-critical assets.
Current Replacement Cost	The cost of replacing the service potential of an existing asset, by reference to some measure of capacity, with an appropriate modern equivalent asset.
Deferred Maintenance	The shortfall in rehabilitation work required to maintain the service potential of an asset.
Demand Management	The active intervention in the market to influence demand for services and assets with forecast consequences, usually to avoid or defer CAPEX expenditure. Demand management is based on the notion that as needs are satisfied expectations rise automatically and almost every action taken to satisfy demand will stimulate further demand.
Depreciated Replacement Cost (DRC)	The replacement cost of an existing asset after deducting an allowance for wear or consumption to reflect the remaining economic life of the existing asset.
Depreciation	The wearing out, consumption or other loss of value of an asset whether arising from use, passing of time or obsolescence through technological and market changes. It is accounted for by the allocation of the historical cost (or revalued amount) of the asset less its residual value over its useful life.
Disposal	Activities necessary to dispose of decommissioned assets.
Economic Life	The period from the acquisition of the asset to the time when the asset, while physically able to provide a service, ceases to be the lowest cost alternative to satisfy a particular level of service. The economic life is at the maximum when equal to the physical life however obsolescence will often ensure that the economic life is less than the physical life.
Facility	A complex comprising many assets (e.g. a hospital, water treatment plant, recreation complex, etc.) which represents a single management unit for financial, operational, maintenance or other purposes.
Geographic Information System (GIS)	Software which provides a means of spatially viewing, searching, manipulating, and analysing an electronic data-base.

Term or Acronym	Description
Infrastructure Assets	Stationary systems forming a network and serving whole communities, where the system as a whole is intended to be maintained indefinitely at a particular level of service potential by the continuing replacement and refurbishment of its components. The network may include normally recognised 'ordinary' assets as components.
Infrastructure Strategy	A strategy for identifying the principal options for managing significant infrastructure issues expected to occur over a 30-year period
Level Of Service	The defined service quality for the Resource Recovery Activity or service area against which service performance may be measured. Service levels usually relate to quality, quantity, reliability, responsiveness, environmental acceptability and cost.
Life	A measure of the anticipated life of an asset or component; such as time, number of cycles, distance intervals etc.
Life Cycle	Life cycle has two meanings: The cycle of activities that an asset (or facility) goes through while it retains an identity as a particular asset i.e. from planning and design to decommissioning or disposal. The period of time between a selected date and the last year over which the criteria (e.g. costs) relating to a decision or alternative under study will be assessed.
Life Cycle Cost	The total cost of an asset throughout its life including planning, design, construction, acquisition, operation, maintenance, rehabilitation and disposal costs.
Maintenance	All actions necessary for retaining an asset as near as practicable to its original condition, but excluding rehabilitation or renewal.
Maintenance Plan	Collated information, policies and procedures for the optimum maintenance of an asset, or group of assets.
Maintenance Standards	The standards set for the maintenance service, usually contained in preventive maintenance schedules, operation and maintenance manuals, codes of practice, estimating criteria, statutory regulations and mandatory requirements, in accordance with maintenance quality objectives.
Net Present Value (NPV)	The value of an asset to the organisation, derived from the continued use and subsequent disposal in present monetary values. It is the net amount of discounted total cash inflows arising from the continued use and subsequent disposal of the asset after deducting the value of the discounted total cash outflows.
Objective	An objective is a general statement of intention relating to a specific output or activity. They are longer term aims and are not necessarily outcomes that managers can control.
Operation	The active process of utilising an asset which will consume resources such as manpower, energy, chemicals and materials. Operation costs are part of an assets life cycle costs.
Optimised Renewal Decision Making (ORDM)	An optimisation process for considering and prioritising all options to rectify performance failures of assets. The process encompasses NPV analysis and risk assessment.

Term or Acronym	Description
Performance Indicator (PI)	A qualitative or quantitative measure of a service or activity used to compare actual performance against a standard or other target. Performance indicators commonly relate to statutory limits, safety, responsiveness, cost, comfort, asset performance, reliability, efficiency, environmental protection and customer satisfaction.
Performance Monitoring	Continuous or periodic quantitative and qualitative assessments of the actual performance compared with specific objectives, targets or standards.
Pipeline Asset Management System	Council uses an asset management system to store, collate and analyse asset data. The current Council system is IPS, a product which is supplied by Infor Global Solutions. The Council has used IPS (previously Hansen) since 1995. The current version deployed is IPS 8.3.0.
Planned Maintenance	Planned maintenance activities fall into 3 categories : Periodic - necessary to ensure the reliability or sustain the design life of an asset. Predictive - condition monitoring activities used to predict failure. Preventive - maintenance that can be initiated without routine or continuous checking (e.g. using information contained in maintenance manuals or manufacturers' recommendations) and is not condition-based.
Rehabilitation	Works to rebuild or replace parts or components of an asset, to restore it to a required functional condition and extend its life, which may incorporate some modification. Generally involves repairing the asset using available techniques and standards to deliver its original level of service (i.e. heavy patching of roads, slip-lining of sewer mains, etc.) without resorting to significant upgrading or replacement.
Renewal	Works to upgrade, refurbish, rehabilitate or replace existing facilities with facilities of equivalent capacity or performance capability.
Renewal Accounting	A method of infrastructure asset accounting which recognises that infrastructure assets are maintained at an agreed service level through regular planned maintenance, rehabilitation and renewal programmes contained in an asset management plan. The system as a whole is maintained in perpetuity and therefore does not need to be depreciated. The relevant rehabilitation and renewal costs are treated as operational rather than capital expenditure and any loss in service potential is recognised as deferred maintenance.
Repair	Action to restore an item to its previous condition after failure or damage.
Replacement	The complete replacement of an asset that has reached the end of its life, so as to provide a similar, or agreed alternative, level of service.
Remaining Economic Life	The time remaining until an asset ceases to provide service level or economic usefulness.
Resilient Infrastructure	Infrastructure that is able to deal with significant disruption and changing circumstances.
Risk	The product of the likelihood of an event occurring and the estimated impact (consequence) of the event.
Risk Cost	The assessed annual cost or benefit relating to the consequence of an event. Risk cost equals the costs relating to the event multiplied by the probability of the event occurring.
Risk Management	The application of a formal process to the range of possible values relating to key factors associated with a risk in order to determine the resultant ranges of outcomes and their probability of occurrence.

Term or Acronym	Description
Routine Maintenance	Day to day operational activities to keep the asset operating (replacement of light bulbs, cleaning of drains, repairing leaks, etc.) and which form part of the annual operating budget, including preventative maintenance.
Service Potential	The total future service capacity of an asset. It is normally determined by reference to the operating capacity and economic life of an asset.
Strategic Plan	Strategic planning involves making decisions about the long term goals and strategies of an organisation. Strategic plans have a strong external focus, cover major portions of the organisation and identify major targets, actions and resource allocations relating to the long term survival, value and growth of the organisation.
Unplanned Maintenance	Corrective work required in the short term to restore an asset to working condition so it can continue to deliver the required service or to maintain its level of security and integrity.
Upgrading	The replacement of an asset or addition/ replacement of an asset component which materially improves the original service potential of the asset.
Valuation	Estimated asset value which may depend on the purpose for which the valuation is required, i.e. replacement value for determining maintenance levels or market value for life cycle costing.

1. Introduction

Manaaki whenua, manaaki tangata, haere whakamua. Tihei mauri ora!

No reira, e te haukainga Rangitāne, nei rā te mihi nui ki a koutou e pupuri nei i te mauri o te whenua me ngā wai e rere atu e rere mai.

Tēnā koutou, tēnā koutou, tēnā tātou katoa.

Our vision for Papaioea Palmerston North is "he iti rā, he iti pounamu | small city benefits, big city ambition", where every resident enjoys the benefits of living in a small city yet has the advantages of a big city.

The city is fortunate to have a range of quality assets that are managed in a way that supports this vision and provides our community with essential services, including the Resource Recovery Activity.

At the Palmerston North City Council (PNCC) we provide Rubbish Collection and Recycling Services to:

- Ensure the city's solid waste is adequately and affordably managed;
- Maximise the amount of waste diverted from landfill (such as through recycling and composting);
- Manage hazardous waste in an environmentally responsible manner.

1.1 Purpose and Scope of This Asset Management Plan

This Asset Management Plan (AMP) informs anyone with an interest in our Resource Recovery Activity of the state of our assets, how we intend to operate them effectively, and the investment we will need to maintain and develop them over the long term.

In other words, this AMP is the basis for the long-term planning of the Resource Recovery Activity and its overarching goal is to:

"deliver the required level of service to existing and future customers in the most cost-effective way"

This plan should be read in conjunction with Part A 'Palmerston North City Council Strategic Asset Management Plan (SAMP)'. The SAMP includes the overall strategic approach to managing council assets and overarching issues, practices and systems. The SAMP reflects our aspiration to lift the standard of asset management planning throughout the organisation. It is one of several improvements that represents the beginning of a new, more strategic approach to managing the City's assets.

"Part B", this document, the Resource Recovery Asset Management Plan provides detail on how the practices in Part A are applied to the Resource Recovery Activity. In preparing the current AMP (2020) the previous version (2018) was revised and most of the generic strategic content was moved to the SAMP.

In this context, the specific objectives for this AMP are:

- Supporting evidence for the LTP and 30yr Infrastructure Strategy1
- To translate Our Strategic Vision and Goals into activity strategies and action plans that align with National and Regional policies and strategies. The plan identifies forward works programmes based on strategic outcomes sought, and financial forecasts required to meet agreed service levels and cater for growth;

[1] AMP demonstrates regulatory compliance with section 93(7) & 94(1) of the Local Government Act (LGA) 2002 which in summary requires the Long-Term Plan (LTP) to be supported by the information required by Part 1 of Schedule 10

- To document current asset management practices used by us based on clear evidence as part of a sustainable and optimised lifecycle management strategy for the Resource Recovery Activity infrastructure;
- Project justification through alignment with activity management and operational requirements;
- Driving AM within BAU activities through decision making and activity management practices;
- To understand drivers of demand for services and the implications for the asset;
- To define the services to be provided, the target service standards that we aim to achieve, and the measures used to monitor the performance of the Resource Recovery Activity;
- To comply with the requirements of relevant legislation such as the Local Government Act 2002 and Waste Minimisation Act 2008.

1.2 Iwi, Key Partners and External Stakeholders

We play a central role in promoting waste minimisation and making sure that waste is disposed of safely. However, waste management is a complex societal problem and hence there is very high engagement with us from both the community and government agencies.

1.2.1 Rangitāne o Manawatū

We work in partnership with Rangitāne o Manawatū to ensure Rangitānenuiarawa2 is reflected in the city's approach to resource recovery, including the Resource Recovery Activity.

Rangitāne o Manawatū have opportunities for early involvement in all Resource Recovery projects and initiatives.

1.2.2 Stakeholders

Table 1contains a summary of stakeholders that we regularly engage with on waste management issues. The level of engagement (whether we inform, consult, involve, co-operate with or empower) depends on how significant the issue is and who is ultimately responsible for resolving the issue.

Table 1: External Partners and Stakeholders

Name	**Description**
Ratepayers	People who own properties within the Palmerston North City Council boundaries but may or may not reside in the city.
Commercial Service Users	Businesses can subscribe to any of our commercial services: food waste and/or glass and/or mixed recycling. Alternatively, businesses can opt-in to the rated kerbside recycling service
Residents	People who live within the Palmerston North City Council boundaries but may or may not live in the rubbish and recycling collection areas.
Other Businesses	Individuals or organisations who carry out their business in the city.
Visitors to Palmerston North	Palmerston North and the Manawatū District represent the 13th largest domestic visitor spend.
Education and Research Institutes	Early Child Centres, Primary and Secondary Schools Massey University, including the Zero Waste Academy
Environmental Groups	As represented by the Environmental Network Manawatū

[2] Rangitānenuiarawa is the Rangitāne expression of kaitiakitanga, or customary authority and guardianship, and affirms their customary leadership in ensuring the health and regeneration of their tribal rohe.

Name	**Description**
Manawatū-Whanganui Regional Council, trading as Horizons	The environmental, regulatory, and monitoring body under the Resource Management Act for the natural resources in the Manawatū-Whanganui region. We hold consents with Horizons for our two closed landfills and composting operations.
Lease holders (at ARRP)	Currently (Reclaimed Timber, Higgins Family Holdings and Macauly Metals)
Media	Manawatū Standard
Contractors	Contractors and tradespeople who assist in the delivery of Council activities (plant maintenance and green waste shredding etc)
Other waste collection providers	Waste Management, Envirowaste, Low-Cost Bins, Lucy's Bins
Waste disposal	Midwest Disposals Ltd operates the Bonny Glen landfill, near Marton.
WasteMINZ	WasteMINZ is considered "the authoritative voice on waste, resource recovery and contaminated land in New Zealand and seeks to achieve ongoing and positive development of the industry through strengthening relationships, facilitating collaboration, knowledge sharing and championing the implementation of best practice standards".[3] We are an active member of WasteMINZ.
Government agencies	**Ministry for the Environment:** Government`s key advisor in New Zealand and international matters for the environment. Coordinate and provision of guidance on the implementation of the Waste Minimisation Act (WMA) 2008. Monitoring responsibility to ensure local authorities meet their responsibilities such as levy expenditure. **Ministry of Health:** Overall responsibility in New Zealand for public health, including issues relating to the rubbish and recycling services. Council is required to consult with regards to the content of the Waste Management and Minimisation Plan (WMMP).
Commodity traders	Companies that purchase our sorted recyclable commodities.
Neighbouring local authorities	Manawatū, Horowhenua and Tararua districts adjoin Palmerston North City, and we are within the boundary of Horizons Regional Council. Council has a contract with Manawatū District Council for illegal dumping investigations. Council maintains relationships with other Councils for the exchange of information and management practices.
Community gardens	Community gardens, including school gardens, can receive free compost.

[3] www.wasteminz.org.nz

1.3 Relationship with Other Plans

Figure 1 shows the relationships between our key planning documents.

Figure 1: Relationship of Asset Management Plan (AMP) to Other Plans

This section outlines the relationships between the Resource Recovery AMP, WMMP and other Council AMPs. These other plans are available on our website.

1.3.1 Relationship to the Waste Management and Minimisation Plan 2019

We have a statutory requirement under the Waste Minimisation Act 2008 (WMA) to promote effective and efficient waste management and minimisation within Palmerston North. We do this by adopting a Waste Management and Minimisation Plan (WMMP). We also have obligations under the Health Act 1956 to ensure that our waste management systems protect public health.

Our WMMP was revised in 2019 and spans the period 2019 to 2025. It sets the priorities and strategic framework for managing waste in the city. In the WMMP we have set a target to increase the proportion of waste diverted from landfill from 38% to 48% by 2025. The WMMP outlines the strategies which Council are proposing to meet this target. Some actions will require new assets, and these have been identified in this AMP (see Section 8.2).

1.3.2 Relationship to Other Asset Management Plans

The following relationships between this AMP and other AMPs have been identified:

- **Stormwater AMP:** Illegal dumping in urban waterways.
- **Transport AMP:** Street litter and public space bins.
- Parks and Reserves AMP: Public space bins.
- **Property AMP:** The Property activity manages all the Resource Recovery buildings as a specialist support function. The Property AMP covers the strategies and work programmes needed to identify the required management and investment in property to support the Resource Recovery activities.
- **Water AMP:** In particular, water supply and firefighting service to the Materials Recovery Facility.
- **Wastewater AMP:** This activity provides sewer connections to Resource Recovery property.

1.4 AMP Framework

Our Asset Management Process is based on the sixteen Asset Management practices as defined by the International Infrastructure Management Manual as shown in Figure 2 below.

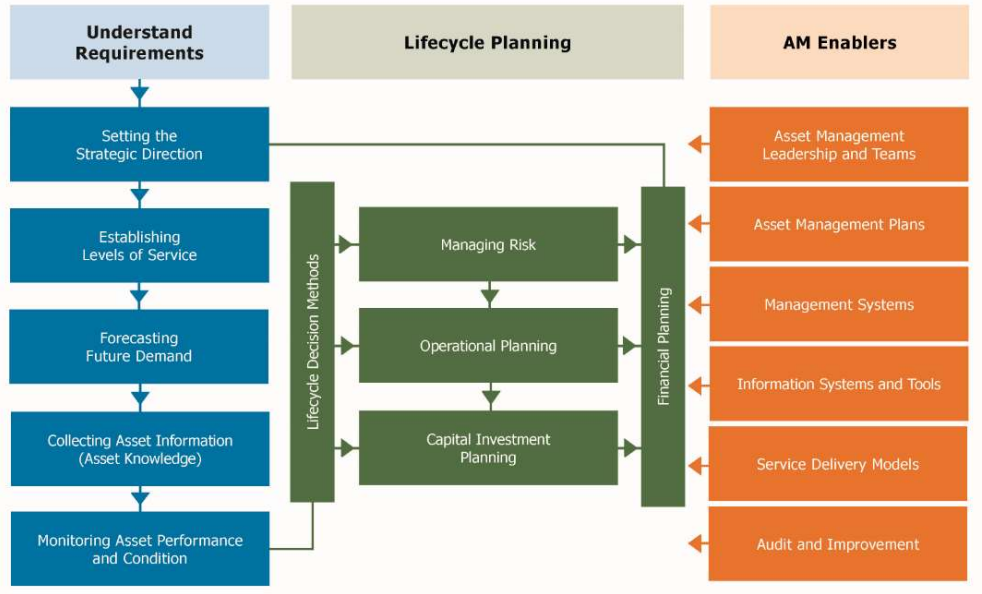


Figure 2: Schematic of Internationally Recognised Asset Management Practices

This AMP documents the key outcomes of each step of our Asset Management process to provide better accountability, sustainability, risk management, service management and financial efficiency. Table 2 contains an outline of the AMP structure.

Table 2: Framework for Navigating the AMP

Section	Description
1. Introduction	What is the purpose of this Asset Management Plan?
2. Strategic Context	Why we invest in the Activity?
3. Description of the Resource Recovery Activity	What are the services we provide? Who do we provide services to?
4. How We Manage the Resource Recovery Activity	How do we deliver the Activity? Are we getting value? (Section 17A Review)
5. Description of Assets	What are our assets? How are our assets performing?
6. Risk Management	What are our risks?
7. Levels of Service	What level of service do we provide? The desired future state of the service?
8. Impact of Demands and Drivers	What type of growth should we plan for? What are the trends affecting the Activity?
9. Lifecycle Management	What programmes of work do we need to do?
10. Financial Summary	What will it cost? How will we pay for it?
11. Plan Monitoring and Improvements	How do we get better? How do we track progress?

2. Strategic Context

2.1 Our Strategic Direction

Our vision is He Iti Rā, He Iti Pounamu | Small City Benefits, Big City Ambition. While the challenge of mitigating climate change is a global one, Palmerston North needs to play its part in reducing emissions. The task of lowering the city's carbon footprint forces everybody to identify inefficiencies and improve the way they do things. Understandably, one of our goals, therefore, is to reduce waste.

To achieve our City's vision, we have aligned the Resource Recovery Asset Management Plan with:

- Goal 4: an Eco City, the Eco City Strategy and notably the:
    - Resource Recovery Plan (formerly Waste Plan)
    - Environmental Sustainability Plan (Sustainable Practices chapter)
- Waste Management and Minimisation Plan 2019

2.2 Priorities under Goal 4: An Eco City

Figure 3 below outlines our strategic priorities and high-level approaches relevant to the Resource Recovery Activity.

Strategic Priority	Eco City Strategy	Resource Recovery Plan
Use our legislative powers and policies to ensure urban development is sustainable now and into the future	**Waste minimisation** Following a waste assessment the Waste Management and Minimisation Plan (WMMP) was updated in 2019. Recent progress has been made in moving towards zero waste events in the city. Council may mandate zero waste events in future once there is a system in place to make it easy for event organisers. Council has been having initial success in using a 'behaviour change' approach to encourage people to minimise and properly dispose of waste.	Our target is to increase the proportion of waste diverted from landfill to 48% by 2025. The following objectives have been adopted from the WMMP: 1. A community committed to minimising waste sent to landfill 2. A community that considers, and where appropriate implements, new initiatives and innovative ways to assist in reducing, reusing and recycling wastes 3. Minimising environmental harm and protecting public health.

Strategic Priority	Eco Strategy	Environmental Sustainability Plan
Demonstrate leadership and best practice by developing and implementing an environmental sustainability plan for the Council, Council-run events, and facilities	**Waste** A 2009 Council report estimated that Council facilities sent 840 tonnes of waste to landfill each year. As much as 88% of its office waste could be diverted from landfill and recycled or composted.	We support the following: 1. Fostering of waste reduction and more sustainable waste management behaviours across the city. 2. Encouraging zero waste events and requiring all events on Council land and/or funded by Council to use 100% recyclable or compostable materials. 3. Work actively with community and business partners to change existing practices to deliver more sustainable outcomes. 4. Extend scope of behaviour change programme to waste

Figure 3: Strategic Priorities

Note also that the Eco City prioritises working with the community to reduce carbon emissions. A secondary outcome of this will be a reduction in waste as a result of systematically reducing carbon emissions.

2.3 Iwi Aspirations and Values

We work in partnership with Rangitāne o Manawatū and Rangitānenuiarawa is reflected in the city's approach to waste management and resource recovery. Many of the following Iwi aspirations are also shared by us:

- Reduce landfill load;
- Waste Management Plan needs clear goals and accountability for reducing waste;
- Urban streams are no longer impacted by littering and fly-tipping;
- Council needs to support people who have a waste problem so that it doesn't get into the environment;
- Need for a Waste Minimisation strategy;
- Divert green waste and food waste from landfill.

2.4 New Zealand Waste Strategy: Reducing Harm, Improving Efficiency

The New Zealand Waste Strategy: Reducing Harm, Improving Efficiency outlines the Government's high-level strategic direction for waste management and minimisation in New Zealand. This strategy was released in 2010 and replaced the 2002 Waste Strategy.

The New Zealand Waste Strategy has two goals:

- Reduce the harmful effects of waste; and
- Improve the efficiency of resource use.

It states "territorial authorities have a statutory responsibility to promote effective and efficient waste management and minimisation, per the Waste Minimisation Act.

Under the Act, all territorial authorities must review their waste management and minimisation plans (WMMPs) by 1 July 2012 and every six years thereafter. When reviewing their WMMPs territorial authorities must have regard to the New Zealand Waste Strategy.

Territorial authorities should use their WMMPs to guide the spending of their portion of the waste disposal levy in ways that maximise opportunities to minimise waste".

2.5 Waste Management and Minimisation Plan 2019

The Council has a statutory requirement under the Waste Minimisation Act 2008 (WMA) to promote effective and efficient waste management and minimisation within Palmerston North. We do this by adopting a Waste Management and Minimisation Plan (WMMP). We also have obligations under the Health Act 1956 to ensure that our waste management systems protect public health.

The current WMMP, adopted in 2019, meets the requirements set out in the Waste Minimisation Act, including to:

- Consider the 'Waste Hierarchy' which sets priorities for how we should manage waste;
- Ensure waste does not create a 'nuisance';
- 'Have regard to' the New Zealand Waste Strategy and other key government policies;
- Consider the outcomes of the 'Waste Assessment'; and
- Follow the Special Consultative Procedure set out in the Local Government Act (2002).

2.6 Regulatory Context

Table 3 below contains a summary of the major Acts of Parliament that govern the Resource Recovery Activity.

Table 3: Acts of Parliament that Govern the Resource Recovery Activity

Statutory Requirement	Description
Waste Minimisation Act 2008	The Waste Minimisation Act encourages a reduction in the amount of waste we generate and dispose of in New Zealand. This to protect the environment from harm and provide environmental, social, economic and cultural benefits.
Local Government Act 2002	The Local Government Act empowers councils to promote the well-being of communities. The purpose of local government is to: • enable democratic local decision-making and action by, and on behalf of, communities • promote the social, economic, environmental, and cultural well-being of communities in the present and for the future. Solid waste collection and disposal is identified as a core service to be considered by a local authority.
Resource Management Act 1991	Requires Council to: • Sustain the potential of natural and physical resources to meet the reasonably foreseeable needs of the future generation • Comply with the District and Regional Plan • To avoid, remedy, or mitigate any adverse effect on the environment • Take into account the principles of the Treaty of Waitangi in exercising functions and powers under the Act relating to the use, development, and protection of natural and physical resources.

Statutory Requirement	Description
Litter Act 1979	The Litter Act was established to make better provision for the abatement and control of litter. The Act is a basic mechanism for local government to prevent littering. The functions of the Act include: establishing enforcement officers and litter wardens who may issue fines and abatement notices for litter offences allowing territorial authorities to force the removal of litter allowing public authorities to make by-laws according to the provisions of the Act.
Health and Safety at Work Act 2015	Provision of a framework to secure the health and safety of workers and work. Sets out the principles, duties, and rights concerning workplace health and safety.
Climate Change Response Act 2002	Legal framework for New Zealand to ratify Kyoto Protocol and meet obligations under United Nations Framework Convention. The Act also enables the Emissions Trading Scheme.
Basel Convention	The Basel Convention is an international treaty that aims to reduce the movement of hazardous waste between different nations. New Zealand raitifed this convention in 1994. The 1989 Basel Convention on the Control of Transboudary movements of hazardous wastes and their diposal aims to reduce the amount of waste produced by signatories and regulates the international traffic in hazardous wastes.

3. Description of the Resource Recovery Activity

3.1 Scope of Our Services

Currently, those living and working in Palmerston North or visiting have access to a range of options to manage their waste as shown in Figure 4 below.

Figure 4: Overview of Services

A summary of where our customers can use our services to recycle different materials or dispose of waste is contained in Table 4 below.

Table 4: Summary of Who we Collect Materials from and Where

Location	Rubbish	Comingled	Glass	Organic Waste[4]	E-Waste	Hazardous Waste
Kerbside Collections	Households	Households CBD Commercial	Households CBD Commercial	Commercial Food Waste	-	-
Illegal Dumping	All	-	-	-	-	-
Ashhurst RDOP	All	All	All	All	-	-
Awapuni RDOP & Resource Recovery Park	-	All	All	All	-	-
Ferguson Street RDOP	-	All	All	-	All	All (Oil)
Public Event	Attendees	Attendees	Attendees	Attendees	-	-
Public Spaces	All	All	All	-	-	-

[4] Includes food waste, green waste, process waste and wastewater treatment plant sludge

The activities are complemented by waste minimisation and public education services, planning, policy development and advocacy. The delivery of the activity is undertaken to:

- Maintain the quality of the service to protect the health of the community;
- Ensure the service is accessible to the community within the service area;
- Ensure the service is reliable with minimal service disruptions;
- Ensure the activity is operated safely to minimise the risks to the public and operational staff;
- Operate to maximise the sustainability of the activity; and
- Operate to minimise the overall cost of the activity.

Broadly, these services are arranged under three sub-activity areas:

- Waste minimisation;
- Waste management; and
- Landfill management.

3.2 Waste Minimisation

3.2.1 Service Description

Table 5 contains a summary of what services our customers can access, how they are paid for, where they can access them and how often.

Table 5: Summary of Waste Minimisation Services

Services	Customers	Revenue Source	Location	Frequency
Promote waste diversion	All	Rates	Education room	Adhoc
Organic and green waste drop-off	All	Charges	Awapuni Resource Recovery Park Ashhurst Transfer Station	Adhoc
Food waste collection	Commercial	Charges	PNCC	Various
Kerbside comingled recycling collection	Households	Rates	Collection Area	Fortnightly
	CBD	Rates	CBD	Weekly
	Commercial	Charges	PNCC	Various
Kerbside glass recycling collection	Households	Rates	Collection Area	Fortnightly
	CBD	Rates	CBD	Weekly
	Commercial	Charges	PNCC	Various
Recycling drop-off	All	Rates	Awapuni RDOP Ferguson Street RDOP Ashhurst RDOP	Daily
Events recycling	Public Event Organisers	Charges	PNCC	Adhoc
Chemical drop-off	Households	Charges	Ferguson Street RDOP (oil only) Hazardous Waste Day Event (all chemicals)	Daily Annual Event

3.2.2 Education and Behaviour Change Campaigns

We actively engage with our customers to ensure the community understands service decisions and can make the most of existing and any new or altered services. We carry out one-off campaigns where necessary such as for a new or significant service change, to reduce contamination of recyclables collected and/or increase diversion rates.

3.2.3 Organic and Green Waste Drop-Off

Our customers can drop off their green waste at the Ashhurst Transfer Station (same site as the Ashhurst RDOP) or the Awapuni Resource Recovery Park.

The Ashhurst Transfer Stations open days are limited to Tuesdays and Saturdays but the Awapuni location is open daily. Note that green waste that is dropped off at the EnviroWaste Transfer Station is then usually sent to our composting operations at the Awapuni site.

Figure 5 below shows the annual and seasonal trends for green waste dropped off at the Ashhurst Transfer Station. The main reason for the decline in usage was an increase in user charges to align them with the Awapuni site. Before the increase, customers were travelling from Palmerston North to make the most of the cheaper fees.

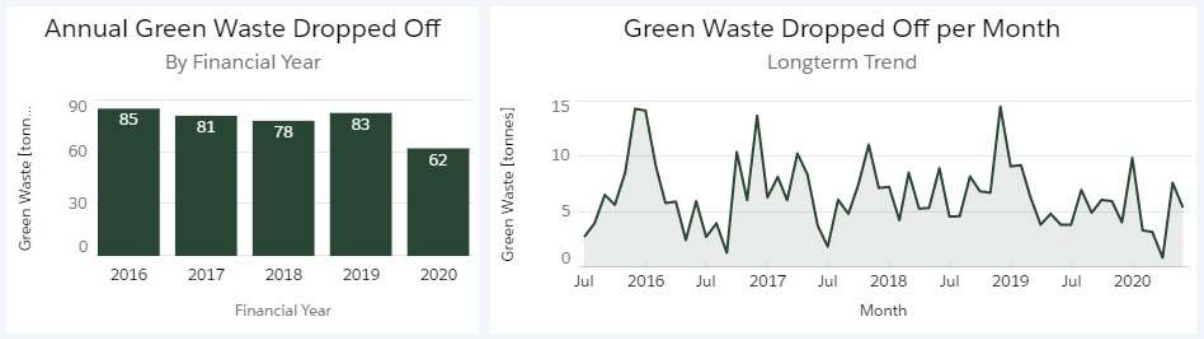


Figure 5: Ashhurst Green Waste Trends

Figure 6 below shows the annual and seasonal trends for green waste dropped off at the Awapuni Resource Recovery Park. The month after lockdown under Covid-19 was the busiest period on record.

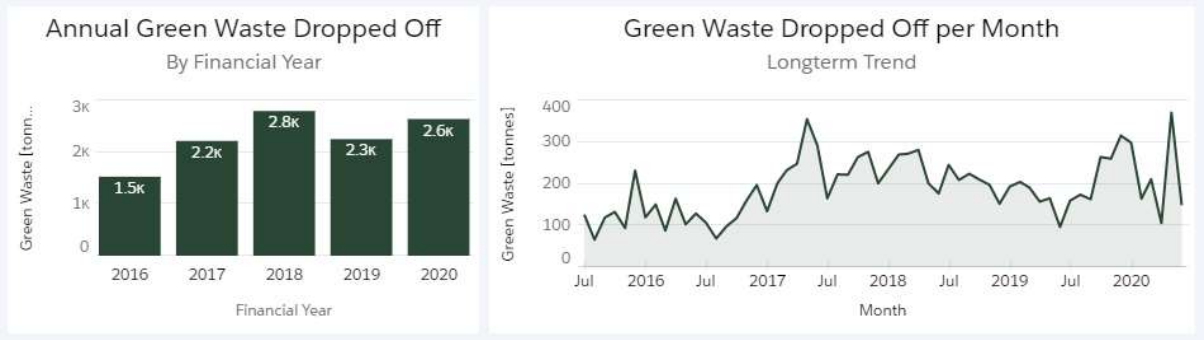


Figure 6: Awapuni Green Waste Trends

We also run a composting operation at the Resource Recovery Park and hence we also take other sources of organic wastes. Table 6 below contains a summary of the number of compost inputs we received for the last few financial years. The volumes of materials being composted at Awapuni have risen steadily year on year, assisted by static fees for green waste drop off and increasing promotion of commercial food waste collection services.

Table 6: Annual Compost Input Quantities in Tonnes

Compost Input Type	2016/17	2017/18	2018/19	2019/20
Animal Bedding	0	6	13	20
Filter Cake	162	125	123	120
Stable Waste	1247	1060	993	1045
Grease Trap	466	459	0	0
Commercial Food Waste Collection	424	354	311	380
Green Waste	5589	6300	6076	6662
Wood Waste	487	479	489	573
Total Tonnes	**8375**	**8783**	**8006**	**8006**

3.2.4 Commercial Food Waste Collection

The commercial food waste collection service is available to businesses to sign up to and is funded by a "per bin lift" user charge. This service is flexible in terms of:

- Frequency and day of collection to suit the business; and
- The number of bins and size of bins. We offer two sizes of wheelie bins: 80 litres and 240 litres.

The food waste collection accepts:

- Food scraps, including meat bones and coffee grounds;
- Paper towels; and
- Certified compostable packaging, such as coffee cups and lids.

There are currently 43 businesses signed up for the food waste collection service (as of June 2020). In 2019 we increased our business development focus, and this has seen a reversal in the decline in food waste collected as shown in Figure 7 below. Our customer retention rate for 2019/20 was 100%, and we welcomed seven new customers.

Our customers are required to maintain the cleanliness of the bins.. Once collected food waste is taken to the Awapuni Resource Recovery Park for composting.

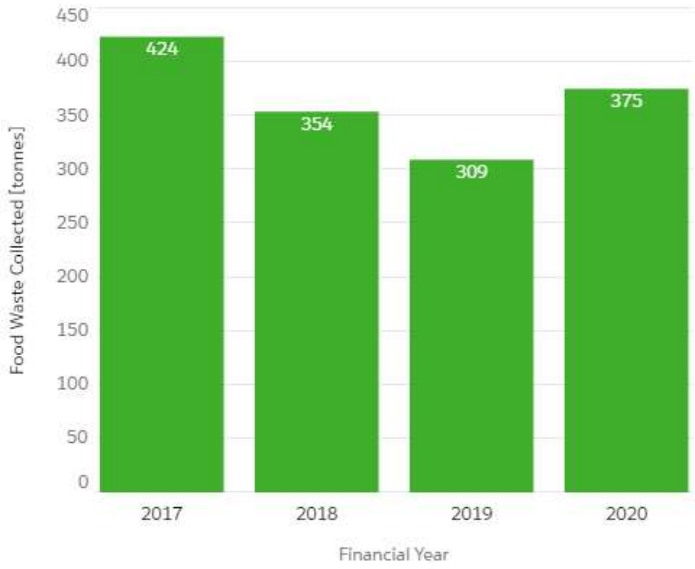


Figure 7: Commercial Food Waste Trends

3.2.5 Commercial Comingled Recycling Collection

Similarly, to the food waste collection, the commercial comingled recycling collection service is available to businesses to sign up to and is funded by a "per bin lift" user charge. This service is twice weekly but is flexible in terms of the number of bins and size of bins. We offer three sizes of wheelie bins: 80 litres, 240 litres and 660 litres.

There are currently 85 businesses signed up for the service (as of June 2020). In 2019 we increased our business development focus, and this has increased recycling collected as shown in Figure 8 below. Our customer retention rate for 2019/20 was 94% but we welcomed 17 new customers.

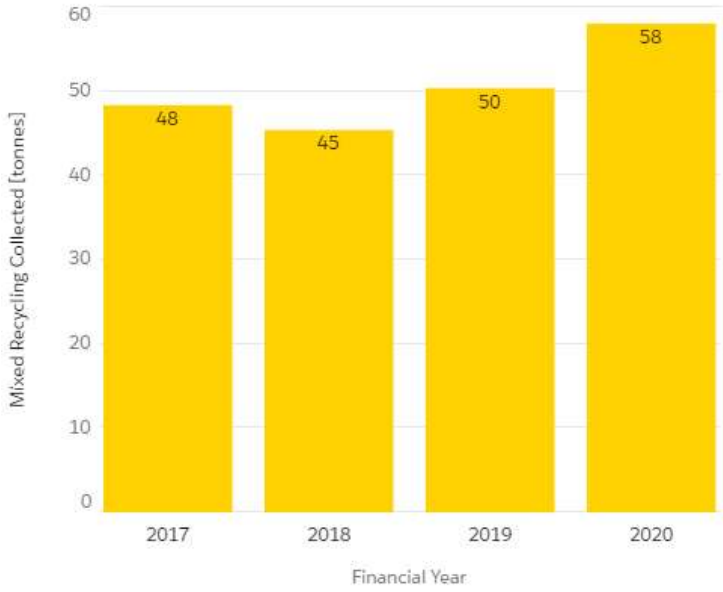


Figure 8: Commercial Comingled Recycling Trends

3.2.6 Commercial Glass Collection

The commercial glass collection service is available for businesses to sign up to and is funded by a "per crate lift" user charge. This is an on-call service and is flexible in terms of:

- Frequency and day of collection to suit the business; and
- The number of crates or bins, and size. We offer 45 litres, 80 litres and 240 litres crates/bins.

There are currently 63 businesses signed up for the glass collection service (as of June 2020). Our customer retention rate for 2019/20 was 96%, down from 98% for the previous financial year but overall, there was a net increase of 18 customers.

3.2.7 Kerbside Comingled Recycling Collections

A fortnightly kerbside collection of comingled recyclables is delivered using our plastic wheelie bins. The service is provided through targeted rates to:

- All residentially zoned properties in Palmerston North;
- Specified commercial properties; and
- Some rural lifestyle properties.

Our non-commercial customers can request a smaller wheelie bin or an extra wheelie bin from us. Additional charges apply to second or subsequent bins.

Residential kerbside comingled recycling is relatively stable as shown in Figure 9 below. The drop in quantities a few years ago reflects the change in materials accepted, that is, we no longer accepted single-use plastics. During Level 4 we were unable to process what we collected and had to send 406

tonnes to landfill. CBD collections have increased in the last few years and would have increased last year even more if it had not been for restrictions under Covid-19. Last year we emptied more than 0.5 million bins.

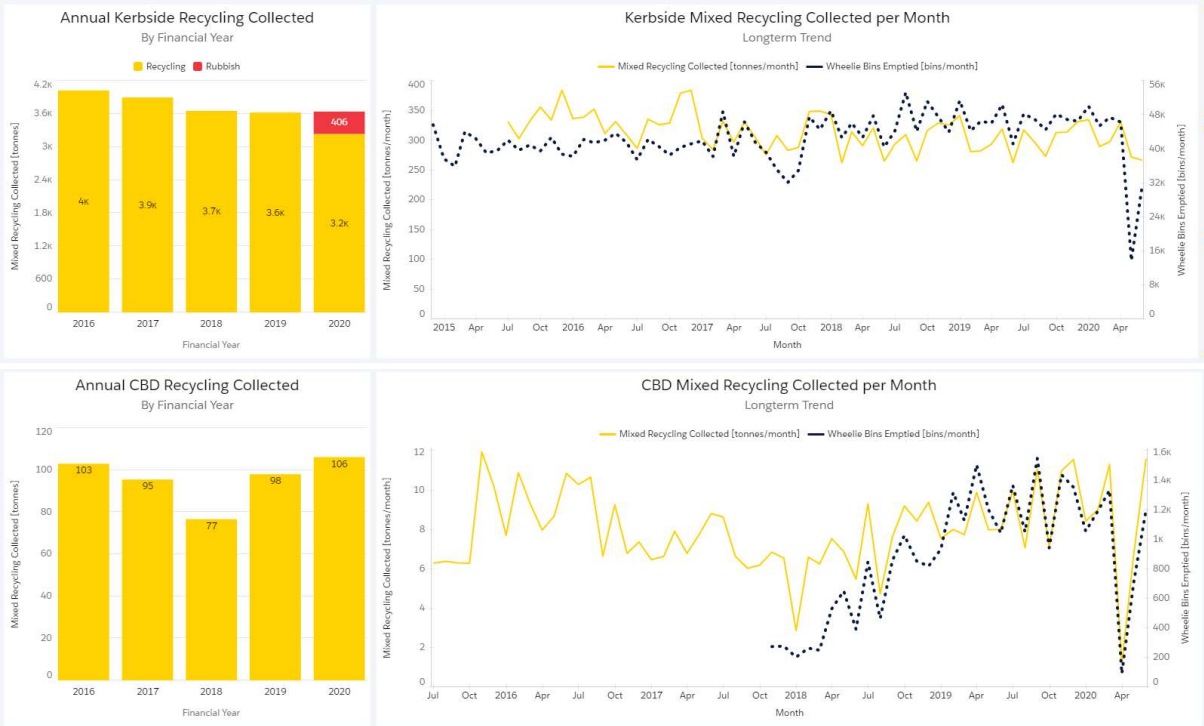


Figure 9: Kerbside Residential and CBD Comingled Recycling Trends

3.2.8 Kerbside Glass Collections

A fortnightly kerbside collection of glass is delivered on alternative weeks to the comingled recycling collection in the same area as shown in Figure 19 above. The service is provided through targeted rates using crates to:

- All residentially zoned properties in Palmerston North;
- Specified commercial properties; and
- Some rural lifestyle properties.

Our non-commercial customers can request one extra crate from us free of charge.

The amount of glass we collect from kerbside glass recycling is relatively stable as shown in Figure 10 below. The drop in the amount collected a few years ago reflects the change in materials accepted, that is, we no longer accepted single-use plastics. CBD collections have increased in the last few years and would have increased last year even more if it had not been for restrictions under Covid-19. Last year we emptied more than 250,000 crates of glass.

Figure 10: Kerbside Residential and CBD Glass Recycling Trends

3.2.9 Recycling Drop Off Points

Recycling Drop Off Points (RDOPs) are available for residents and businesses to use in addition to the collection services. There are three RDOPs located at Ashhurst, Awapuni and Ferguson Street.

Ashhurst Recycling Drop Off Point

The Ashhurst RDOP is located on the outside of the Ashhurst Transfer Station and residential customers can use it 24 hours a day, 7 days a week. Its location makes it vulnerable to contamination and this can result in low recovery of recyclables and relatively high costs to provide the service. Figure 11 below shows a steady increase in glass collected and a stable comingled collection which was impacted slightly by Covid-19 in 2019/20.

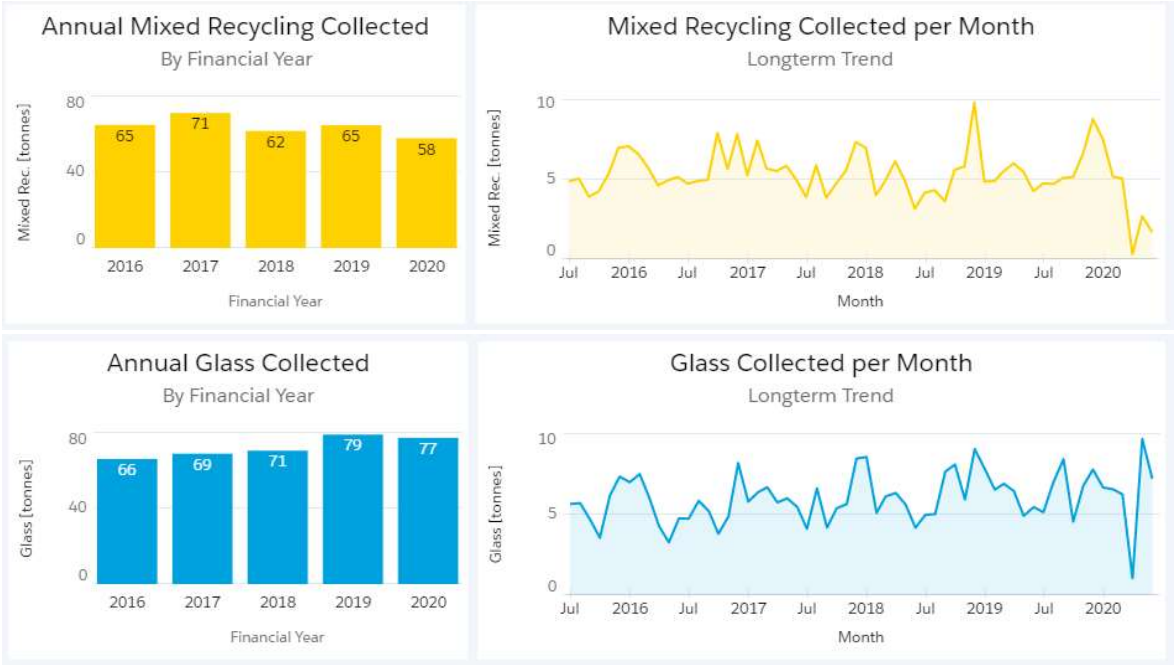


Figure 11: Glass and Comingled Recycling Trends for the Ashhurst RDOP

Awapuni Recycling Drop Off Point

Figure 12 below shows the usage trends, which are very similar to the Ashhurst RDOP, including the impact of Covid-19. We trialed the acceptance of polystyrene at this site in 2019/2020

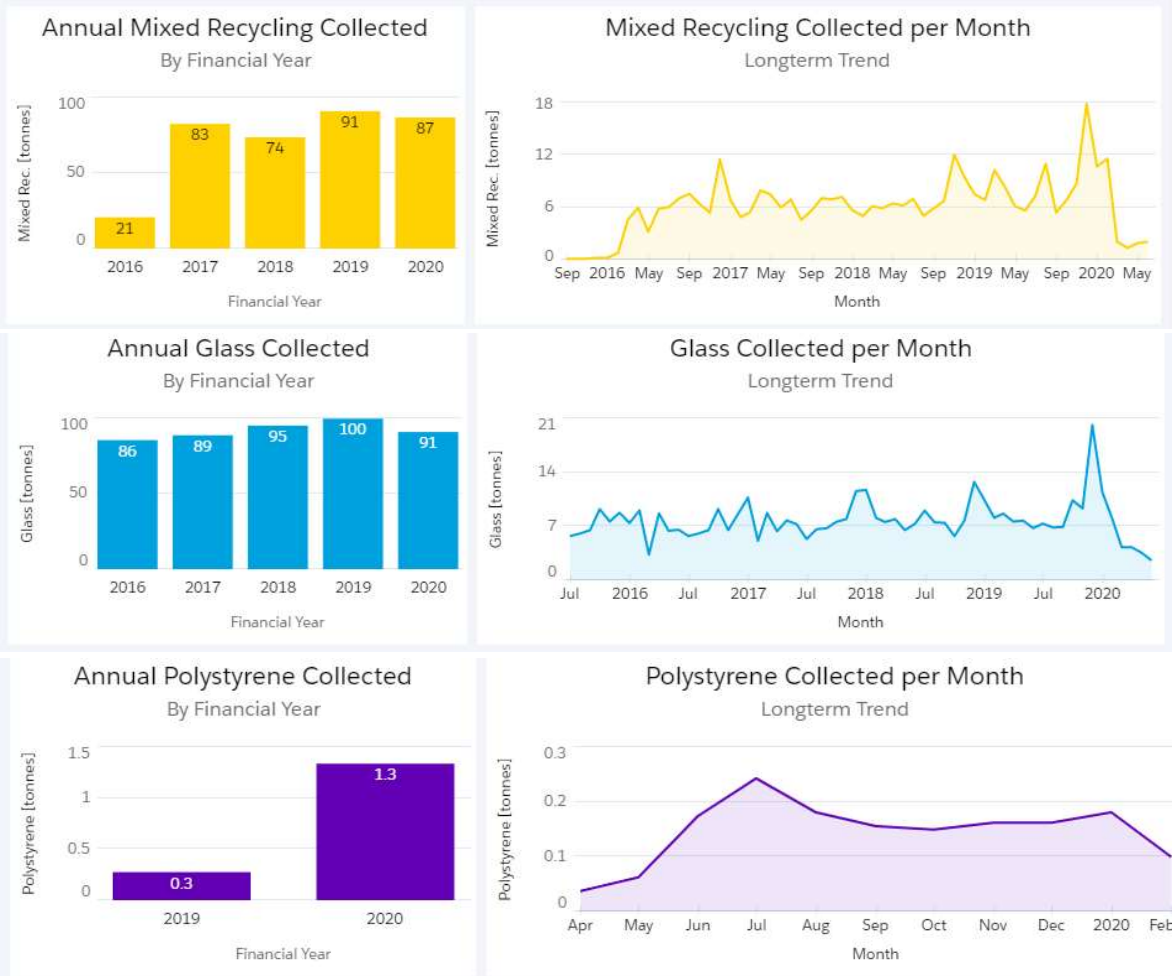


Figure 12: Glass, Comingled Recycling and Polystyrene Trial Trends for the Awapuni RDOP

The Awapuni RDOP is located within the Awapuni Resource Recovery Park (ARRP) site and is therefore available only during the opening hours of the ARRP:

- Monday – Saturday 7:30 am – 4:30 pm
- Sunday and Public Holidays 12:00 pm – 4:00 pm
- ANZAC Day 1:00pm – 4:00pm
- Closed Christmas Day and Good Friday

Ferguson Street Recycling Centre

The Ferguson Street RDOP is available 24 hours a day, 7 days a week for glass recycling but can only accept E-Waste, household motor oil, oil filters, cooking oil, child car seats, batteries and CFC lightbulbs when staffed during the day. While the amount of glass dropped off has decreased slightly at this site, as shown in Figure 13, there have been increases in comingled recycling and E-Waste. The biggest increases in E-Waste are due to Council partially subsidising the recycling of e-waste. Note that customers can purchase our bagged compost product at this site too.

Figure 13: Glass, Comingled Recycling and E-Waste Trends for the Ferguson Street RDOP

3.2.10 Event Recycling

We actively promote the move towards zero waste events as it aligns with our strategic direction. This has resulted in the recent creation of an Events Recycling service where event organisers can hire a trailer from us that includes rubbish and recycling bins. This service is utilised the most in summer as shown in Figure 14 below. The Festival of Cultures and Rural Games have contributed the most recyclables.

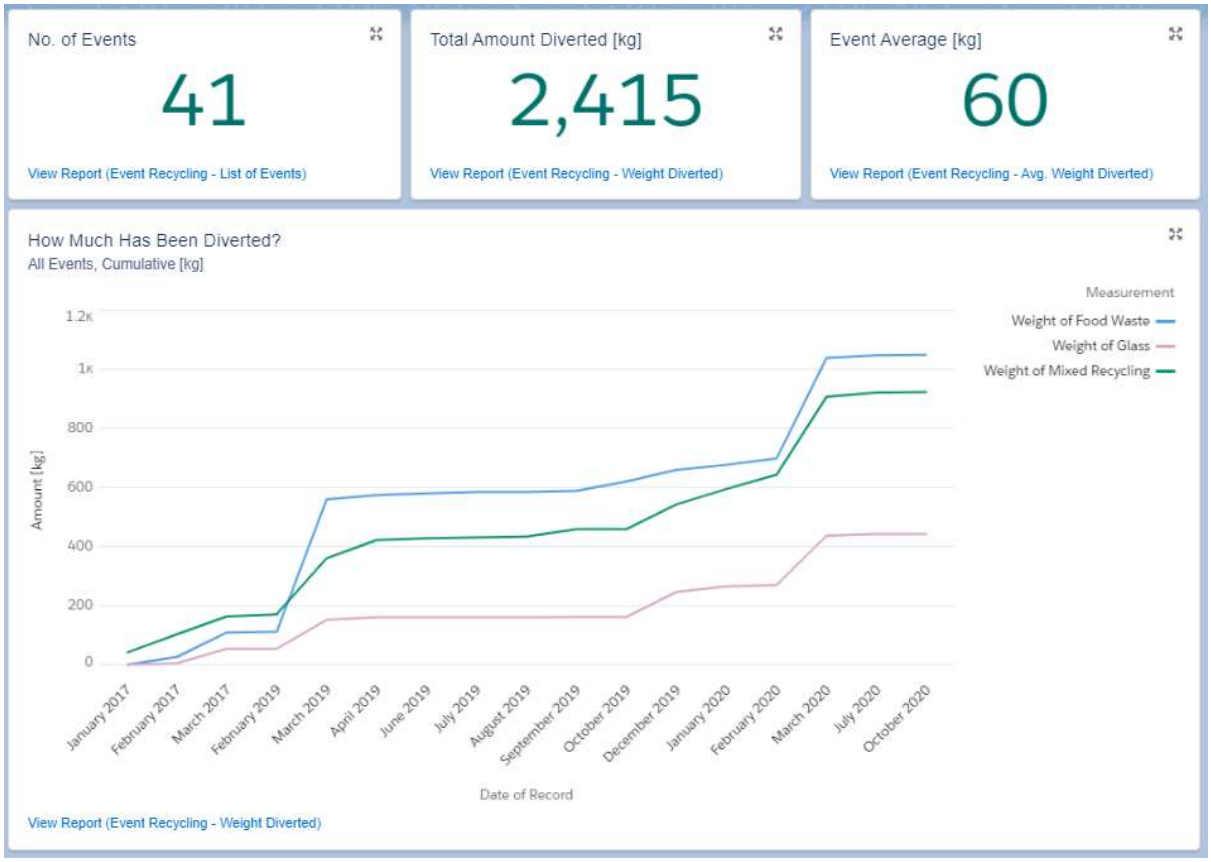


Figure 14: Event Recycling Trends

3.2.11 Household Chemical Waste Collection

As there is no dedicated facility to accept household chemicals. We know hazardous substances are ending up in the rubbish, so we have decided to contract an annual event to provide this service. For the last two years, 3R have provided this and nearly two tonnes of chemicals have been diverted from landfill as shown in Figure 15 below.

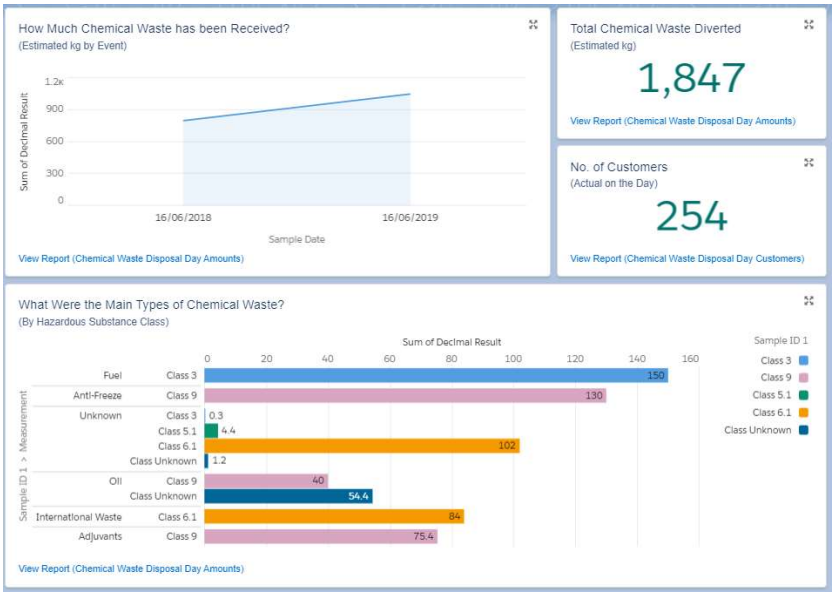


Figure 15: Household Chemical Waste Trends

3.2.12 Overall Recycling Trends

Figure 16 below shows the annual amount of materials collected for the last four financial years. There has been little overall change in quantities. Further details of trends are given for each service in the following sections.

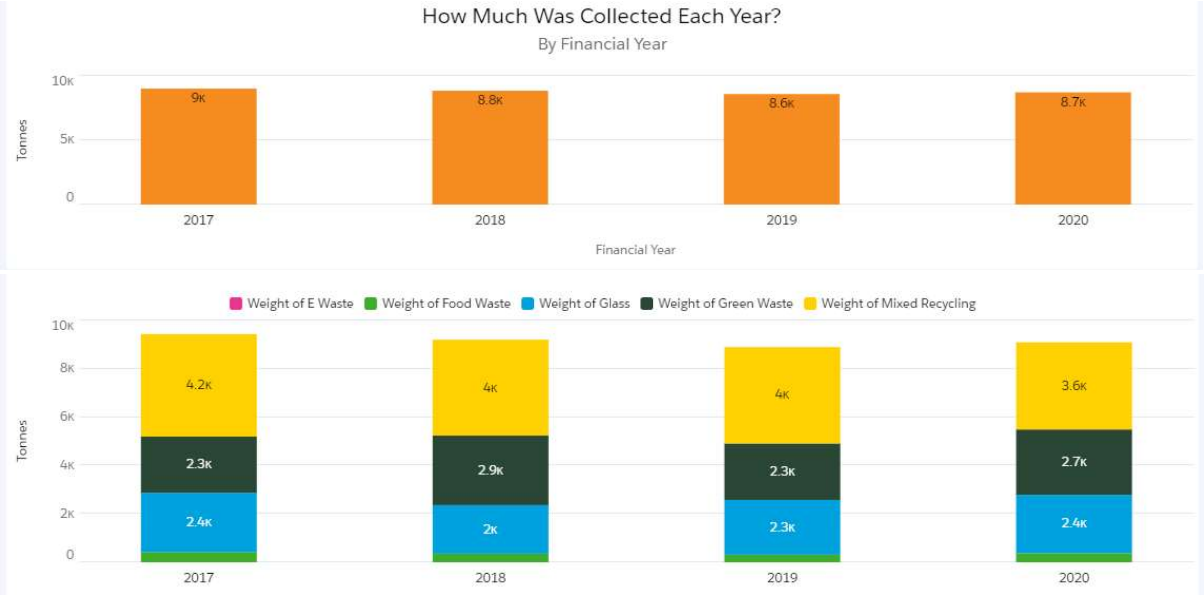


Figure 16: Overall Recycling Trends

3.3 Waste Management

3.3.1 Service Description

Table 7 contains a summary of what services our customers can access, how they are paid for, where they can access them and how often.

Table 7: Summary of Waste Management Services

Services	Customers	Revenue Source	Location	Frequency
Kerbside rubbish bag collection	Households CBD	User pays (bags)	Collection Area	Weekly
Public Space Bins	All	Rates	Public Spaces	Adhoc
Response to Illegal Dumping	All	Fines Rates	PNCC	Adhoc
Rubbish Drop-off	All	Charges	Ashhurst Transfer Station	Adhoc

3.3.2 Overall Rubbish Trends

The rubbish we collect is about 30% of all materials collected as shown in Figure 17 below. There has been little overall change in quantities in the last four years. Further details of trends are given for each service in the following sections.

Figure 17: Annual Tonnes of Resource Recovery Collected

3.3.3 Council Approved Rubbish Bag Collection and Disposal

We provide a weekly kerbside collection of rubbish bags from residential areas and the CBD, using Council official rubbish bags. The assets associated with this service (rubbish collection vehicles) are leased and do not form part of this AMP.

Kerbside bagged rubbish is an opt-in, user-pays service, which is currently utilised by approximately 29,000 households. Those wanting to participate in the service can buy officially approved rubbish bags from our Customer Service Centre at Te Marae o Hine. We also have agreements with some retailers who have agreed to charge no more than $2.50 per bag to ensure the service is equitable and affordable. The cost of buying the bag covers the cost of us to collect and dispose of it.

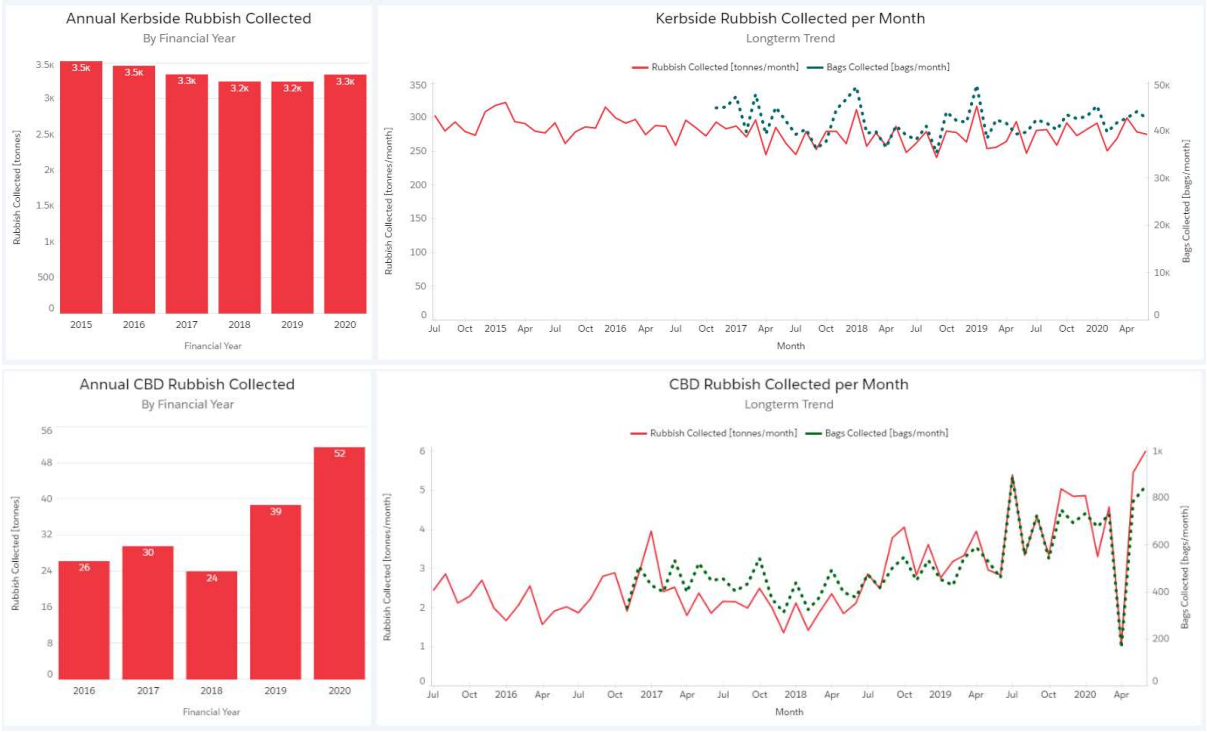


Figure 18: Kerbside Household and CBD Rubbish Bag Collection Trends

Figure 18 above shows the household and CBD kerbside rubbish bag collection trends. While the amount collected from households has remained constant, the amount from businesses in the CBD areas has increased substantially.

We recently changed the minimum number of bags in a pack, from 10 to 5. The pack size was reduced to lower the upfront cost of buying bags for low-income families. In March 2020 we also introduced a 40 L bag priced at a maximum price of $1.80 each. This provides an alternative for those households who find the regular 60 L size too large for their needs. The price per bag has remained the same since July 2017.

The rubbish collection area is shown in Figure 19 below. Rubbish bags are taken to the EnviroWaste owned and operated transfer station at Matthews Avenue. Rubbish is consolidated here before being sent via bulk haulage to the Midwest owned Bonny Glen Landfill for disposal. All assets at the Matthews Avenue transfer station and Bonny Glen disposal facility are privately owned and operated and are therefore outside the scope of this AMP.

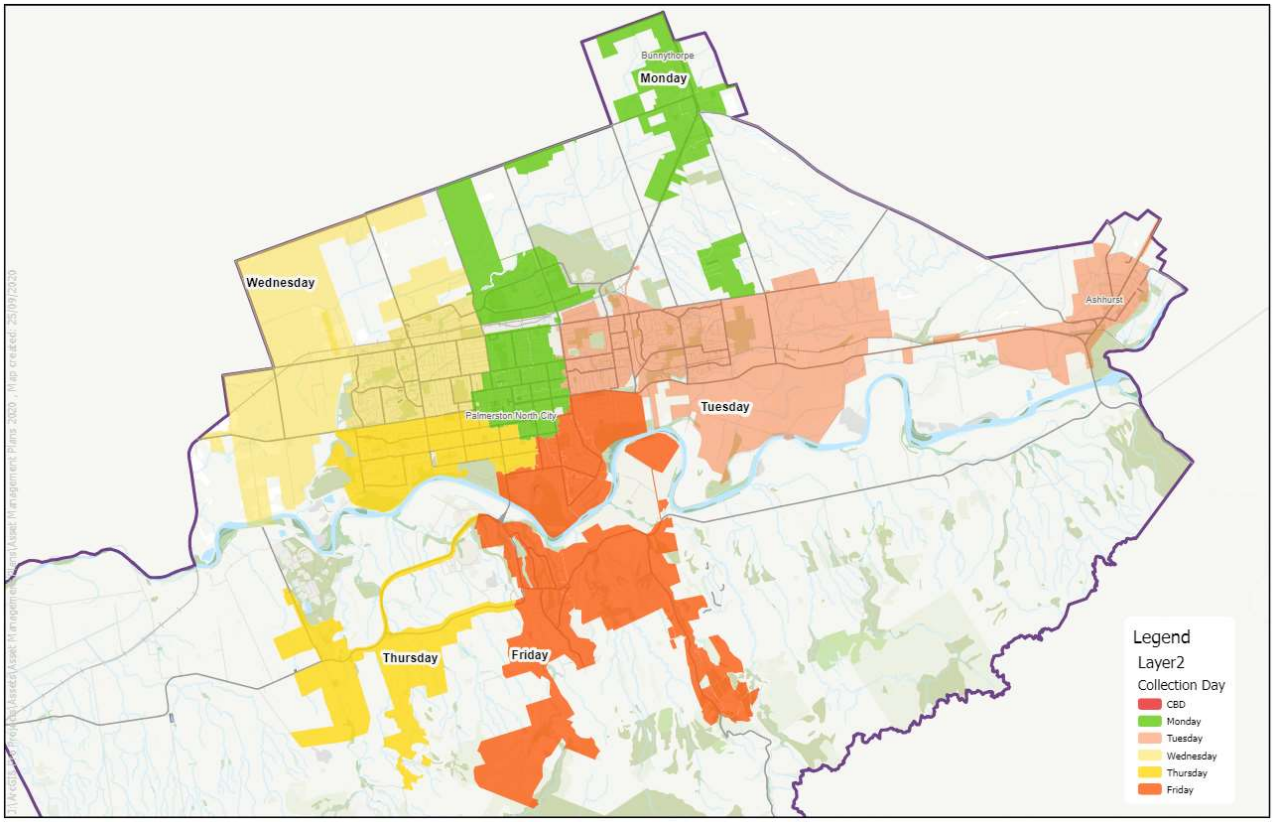


Figure 19: Rubbish Collection Areas

3.3.4 Public Space Bins

Council provides public rubbish and recycling services in parks, roads and other public spaces. The emptying of these bins is undertaken at varying regularity, depending on their usage, and can be emptied as often as each day. We process the recycling (but do not record quantities as it is collected with other sources) and take the rubbish to the Matthews Avenue Transfer Station. The assets associated with this service (collection vehicles) are leased and do not form part of this AMP.

Figure 20 below shows a slight decline in the amount of rubbish collected from public space bins. This is most likely due to a reduction in the number of bins as part of rationalising the service (refer to Section 5.7.1)

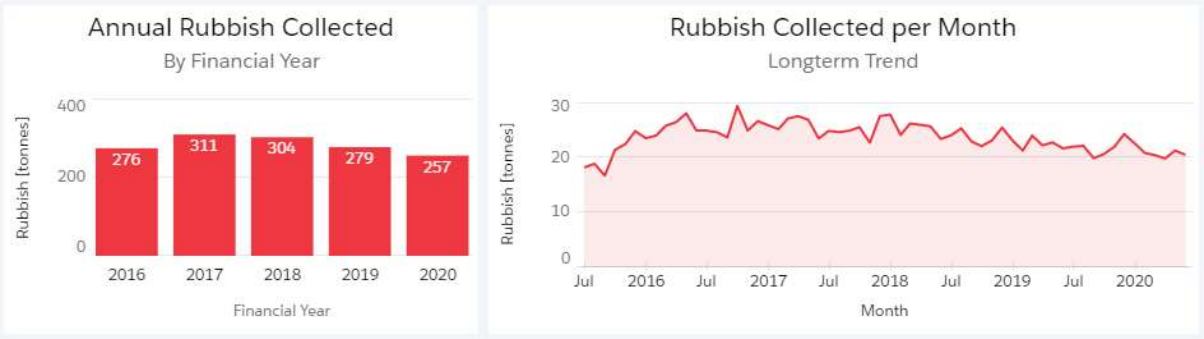


Figure 20: Public Space Rubbish Trends

3.3.5 Response to Illegal Dumping

Illegal dumping is regulated under the Litter Act 1979. Under this Act, we can:

- Include provisions within bylaws to give effect to the Act; and
- Enforce infringement notices.

We undertake active enforcement of illegal dumping, also known as fly-tipping, to try and recover the cost of sending this rubbish to landfill. Enforcement can help deter fly-tipping, but the issue is complicated and is caused by several factors. Illegal dumping can be reported to us or via Horizons Regional Council. The amount of illegally dumped rubbish is shown in Figure 21 below.

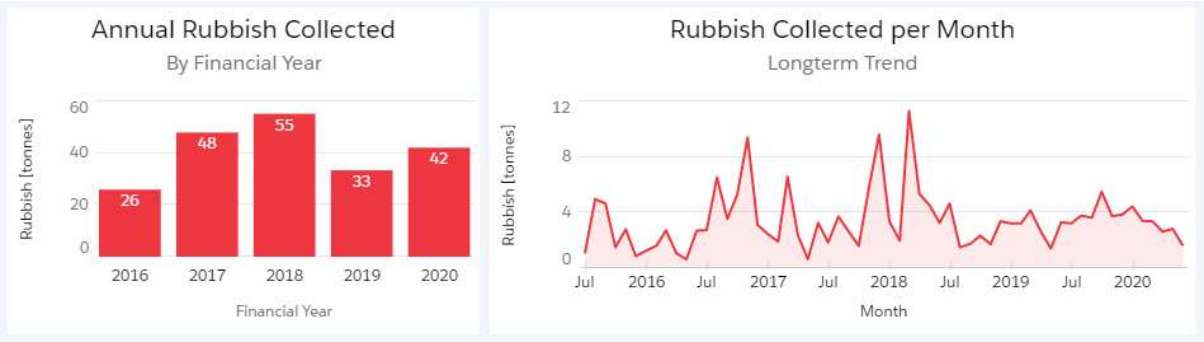


Figure 21: Illegal Dumping Rubbish Trends

3.3.6 Ashhurst Transfer Station

We own and operate a Transfer Station at Ashhurst that accepts rubbish for a charge, or our approved rubbish bags free of charge. The site opens twice a week on Tuesday and Saturday. Figure 22 below shows the impact of increased fees on the amount of rubbish dropped off.

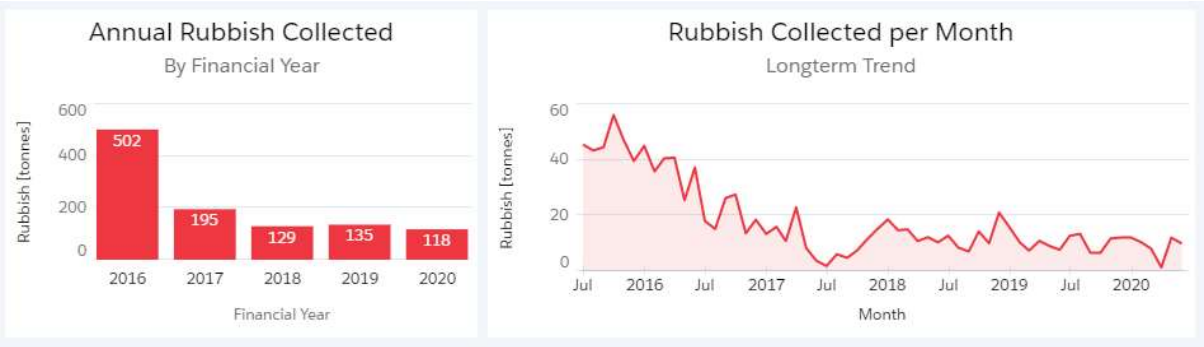


Figure 22: Public Space Rubbish Trends

3.4 Closed Landfill Management

3.4.1 Service Description

We continue to manage our two closed landfills, Ashhurst and Awapuni, in an environmentally and financially sustainable way. Both are managed primarily through resource consents with Horizons Regional Council.

3.4.2 Awapuni Closed Landfill

The Awapuni Closed Landfill stopped taking rubbish in 2007 and is now the home of our Resource Recovery Park, bike jump park and Waste Management Operations. It is located on Tip Road as shown in Figure 23.

Figure 23: Aerial Photo of Awapuni Closed Landfill and Resource Recovery Park

3.4.3 Ashhurst Closed Landfill

The Ashhurst Closed Landfill is located on Fitzherbert East Road, as shown in Figure 24, and has been closed to the public since 1995.

Figure 24: Location of Ashhurst Closed Landfill

3.5 Major Challenges

3.5.1 Insufficient Services to Achieve Waste Diversion Target

Our current services are not diverting enough from landfill. The 2017 Waste Assessment provided data on nearly all waste streams for Palmerston North. This data was analysed and identified the main areas where we could improve our effectiveness in waste diversion. Based on this analysis, the WMMP was updated to include three priority issues that require new services and infrastructure:

- A significant proportion of waste going to landfill is organic waste, with food waste present across all kerbside rubbish collection systems.
- Lack of facilities to recycle or otherwise divert construction and demolition waste, with a predicted increase in construction activity.
- More recyclables could be diverted from commercial properties.

3.5.2 Impact of Covid-19

Government restrictions regarding Covid-19 alert levels required us to offer essential services (where applicable) and for us to interpret the requirements under each alert level, what services we offer, ensuring that operations are in line with requirements.

Influencing behaviour that results in waste minimisation is an ongoing challenge. As mentioned, in 2020 Covid-19 became a significant issue for contamination of waste in our mixed recycling residential wheelie bin service. In recent years we have worked hard to reduce contamination, but this work was undermined when people started to use the recycling service for disposing of waste during Level 4 when we were unable to process the material and had to landfill it for health reasons.

Since our normal service has resumed, recycling contamination levels have not returned to previous levels, costing us more to dispose of this waste. Public education and awareness programmes are vital and will continue to play a key role in delivering the services.

Our response under each level in 2020 was:

- Level 4 restrictions:
  - Commingled recycling is collected but sent to landfill.
  - Glass is collected and recycled, but not colour sorted.
  - Rubbish bag collection continueed at the current Level of Service.
  - Public drop off facilities at Ferguson Street, Awapuni and Ashhurst are closed.
  - Green waste services stopped.
  - Compost and mulch sales stopped.
  - Processing of WWTP sludge as an essential service
- Level 3 restrictions:
  - Commingled recycling is collected, processed at the MRF, maintaining social distancing and operated at reduced capacity – less staff
  - Glass is collected and recycled, but not colour sorted
  - Rubbish bag collection continues.
  - Public drop facilities at Ferguson Street, Awapuni and Ashhurst are open. Social distancing, and contact tracing at manned sites only.
  - Green waste services recommence, with a large increase in volumes in the period following level 4 restrictions. No compost or mulch sold at level 3.

- Level 2 restrictions:
  - Commingled recycling is collected, processed at the MRF, maintain social distancing and operated at reduced capacity – less staff
  - Glass is collected and recycled and transitioned back to colour sort.
  - Rubbish bag collection continues.
  - Public drop facilities at Ferguson Street, Awapuni and Ashhurst are open. Social distancing, and contract tracing at manned sites only.
  - Green waste services continue, with a large increase in volumes in the period following level 4 restrictions.
  - Compost and mulch sold.

3.5.3 Other Service Delivery Challenges

Table 8 contains a description of the other challenges and their impact on the Service.

Table 8: Service Delivery Challenges

Challenge	Challenge Description	Impact on Service
Rubbish Collection		
Inconvenience	The inconvenience for some of a bagged kerbside collection service leads to the take up of private bin collection services. Retaining the current participation of those using the service ensures a continuation of the current price.	If there is a decrease in the participation rate, a review of the bag price may be required.
Incorrect use of public litter bins	The use of public litter and recycling bins for the disposal of household produced rubbish.	More frequent collections from bins required.
External Factors Not Specific to the Delivery of One Service		
Changeable markets for recyclables in New Zealand and overseas	A volatile and unstable market and price return for recyclables, due to dependence on a small number of local re-processers and requirement for seeking processing abroad, to which quality constraints are also in place.	Reduced revenue from sales and a net increase in costs. Increased rating impact.

3.6 Significant Negative Effects

Table 9 contains a summary of the significant negative effects of the Activity and how we mitigate them.

Table 9: Mitigation of Significant Negative Effects of the Resource Recovery Activity

Significant Negative Effect	Description of Effect	Mitigation
Waste to Landfill	Landfilling of rubbish presents an adverse effect on the receiving environment.	Council has set goals through its WMMP 2019 to increase the proportion of waste diverted from landfill from 38% to 48% by 2025. The WMMP outlines the strategies which Council are proposing to meet this target.

Significant Negative Effect	Description of Effect	Mitigation
Gas Emissions from the Awapuni Closed Landfill	Decomposition of organic material placed into landfill over time generates various gases including methane, ammonia, hydrogen sulphide and nitrogen, which are released into the atmosphere.	A grid of collection wells has been established on the closed Awapuni landfill, with the collected gas being used for energy generation. This brings a reduction in the release of emissions. An odour control programme is in place at the Awapuni site to combat the impacts of malodour transgressing the site boundaries.
Leachate	Leachates discharging and sediment eroding from the landfill can result in degradation of the environment if not contained.	Mitigation of these effects is undertaken through a system of leachate and stormwater collection which is returned to the wastewater treatment plant. Groundwater monitoring for potentially toxic substances is required per the operative resource consent.
Odour and noise from composting operations	Composting equipment creates noise and the decomposition of organic waste also produces odour.	Odour and noise are managed and monitored through the day to day operations. Some processing operations for example turning are required to comply with the conditions set out within the resource consent.
Windblown Recycling Materials	Paper and other lightweight recycling material are prone to wind displacement, particularly at the exposed Awapuni site.	Mitigation through the presence of a perimeter fence that intercepts windblown materials which are periodically cleaned, ensuring visual presentation of the site.

3.7 What the Activity Currently Costs

Costs associated with this activity have been shown in Figure 25 below for operational, capital renewal and new. Operational expenses are around $7.5M and are increasing slightly in the waste minimisation area. The cost of renewing assets is increasing, and we have not invested in any significant new assets in the last ten years.

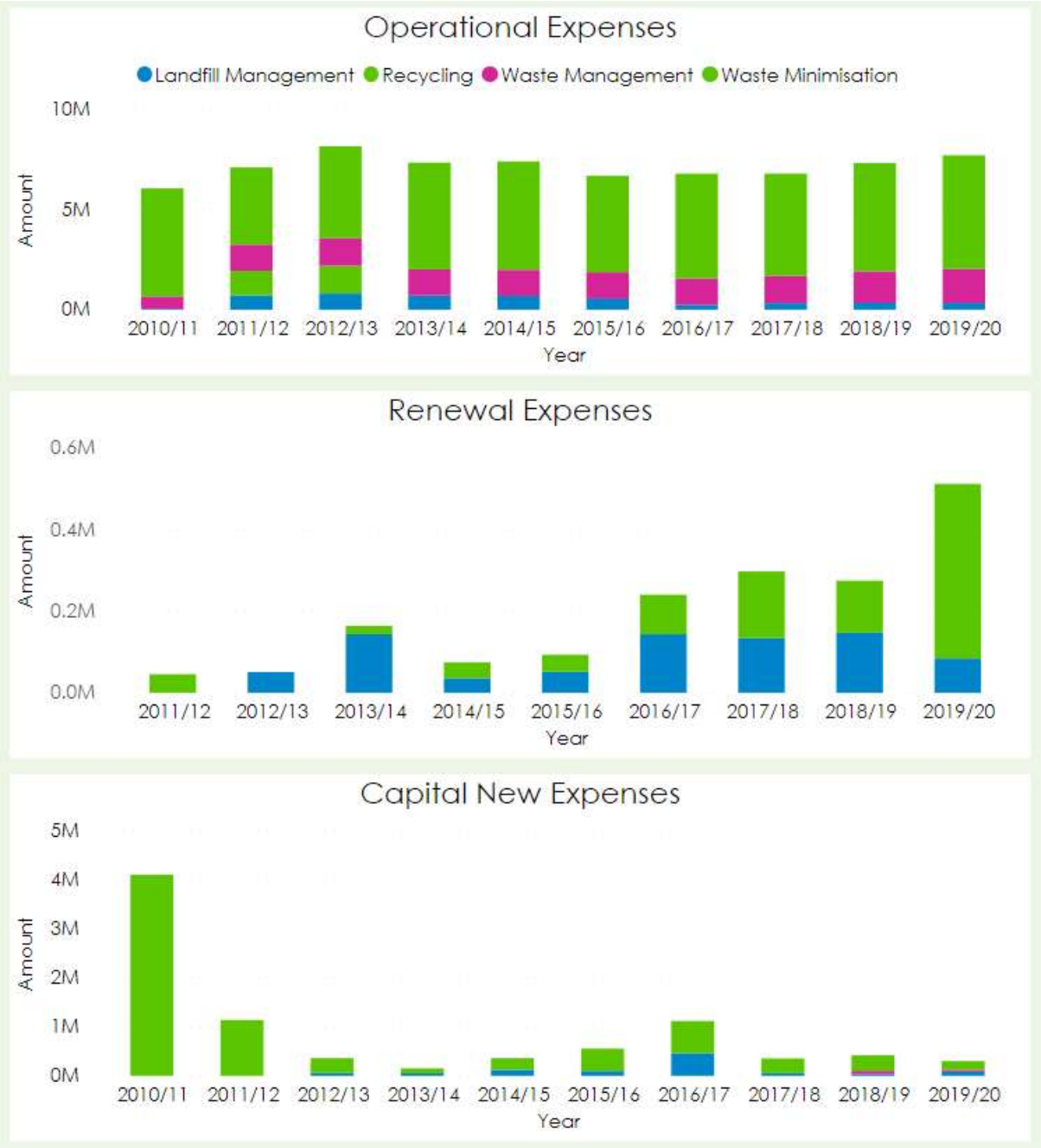


Figure 25: Activity Expenses for the Last 10 Years

4. How We Manage the Resource Recovery Activity

4.1 Asset Management Leadership and Teams

The Waste Management Division is primarily accountable for the management of the Activity. Our inaugural Asset Planning Division (Infrastructure Unit) was formed in 2019 and provides centralised asset management leadership for the Resource Recovery Activity by providing the Waste Management Division with:

- Asset Management advice,
- Asset Information services; and
- Asset Planning support including lifecycle planning.

The Waste Management Division is also supported by functions that sit within other Units of Council as summarised in Table 10. In time, Asset Management leadership will largely transfer to a cross-functional Steering Group (yet to be established).

Table 10: Asset Management Functions and Teams

Function	Type	Unit / Division / Team
Leadership		Elected Members Executive Leadership Team
		Infrastructure Unit / Asset Planning Division
Finance	Support Services	Finance
		Infrastructure Unit / Asset Planning Division / Asset Planning
IT	Support Services	People and Performance / Information Management
HR	Support Services	People and Performance / HR Services
Asset Management	Forward Focus	Infrastructure Unit / Asset Planning Division / Asset Management
		Infrastructure Unit / Waste Management
Risk Management	Forward Focus	Customer / Risk and Resilience
Performance Management	Forward Focus	Strategy and Planning People and Performance
Continual Improvement	Forward Focus	Infrastructure Unit / Asset Planning Division / Asset Planning
Construction	Present Day Focus	Infrastructure Unit / Waste Management
Operations	Present Day Focus	Infrastructure Unit / Waste Management
Maintenance	Present Day Focus	Infrastructure Unit / Waste Management
Customer Interface	Present Day Focus	Customer
Technical Specialists		Various Internal and External
GIS	Data and Information	People and Performance / Information Management

Function	Type	Unit / Division / Team
Asset Management System	Data and Information	Infrastructure Unit / Asset Planning Division / Asset Management
		Infrastructure Unit / Asset Planning Division / Asset Information
		People and Performance / Information Management
Records	Data and Information	People and Performance / Information Management

An organisation chart is provided for reference in Figure 26 below.

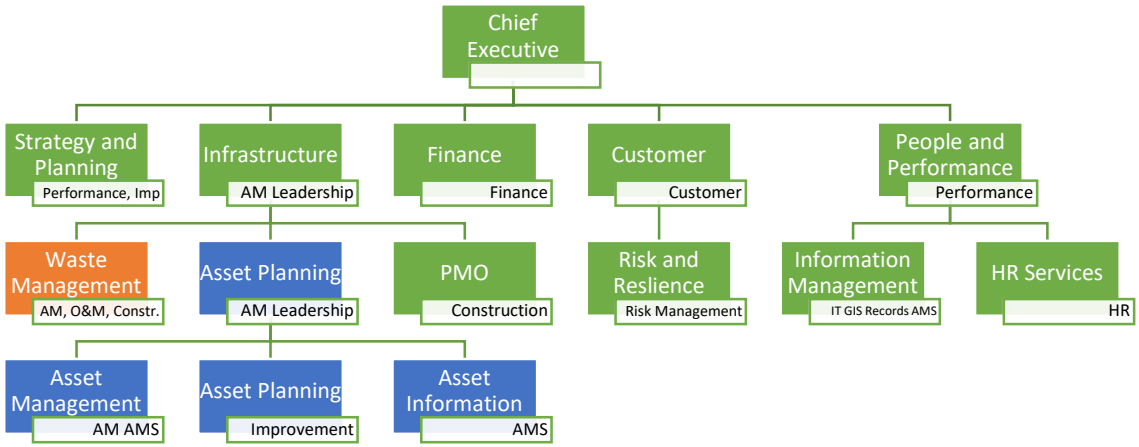


Figure 26: Organisation Chart with Asset Management Functions

4.2 Service Delivery Model

4.2.1 Overview of Service Delivery Model

Not many Councils provide Resource Recovery services. Of those that do, most have outsourced their service delivery. However, we have developed and retained significant capability in-house, as summarised in Table 11 below. Essentially, more specialist activities, such as the design and construction of new buildings, hazardous waste handling, and electric and mechanical, are delivered through the procurement of external contractors. Landfill management consists of maintaining the structural integrity of the closed landfills and operating the gas collection system and requires little to no design and construction of assets.

External contractors are procured in line with our Management Team Policy for procurement and are managed predominantly by in-house Project Managers.

Note that external consultants are also engaged to carry out specialist investigations or provide technical advice on planning, including Waste Assessments and Waste Minimisation and Management Plans, consenting and policy matters.

Table 11: Service Delivery Model by Sub-Activity

Sub-Activity	Service Delivery Function	Internal Service Delivery Team	Internal Capabilities	Scope of External Service Delivery
Waste Minimisation Waste Management	Design	Transport and Infrastructure Division > Design Team	Minor architectural	Most projects
	Construct	Transport and Infrastructure Division > Civil Construction Team	Minor civil works	Most projects
	Operate	Waste Management Division	Most	Hazardous waste events
	Repair	Waste Management Division	Minor repairs	Property Electric and mechanical
Landfill Management	Operate	Waste Management Division	All	None
	Repair	Waste Management Division	Most	Landfill gas utility

4.2.2 Section 17A Review of Service Delivery Model

The service delivery model was reviewed in 2017 per Section 17A of the Local Government Act. Resource Recovery were considered separate but intertwined services. This is because other companies offer rubbish collections, but we are the only provider of comprehensive recycling services. However, we do need to look at refuse and recycling services holistically when it is trying to influence people's behaviour to minimise waste.

After considering the information presented in Stage 1, elected Members were of a view that a Stage 2 Review was not warranted and that refuse and recycling services should be governed, funded and delivered directly by Council. This is because of the strong contribution these services jointly make to Council's strategic goals for waste minimisation.

This maximises the opportunities to change people's behaviour and hence reduce the amount of waste that they generate. Also, without our involvement, there may be limited recycling collections because of a lack of commercial opportunities for some recyclables.

Table 12 summarises the current arrangement for service delivery.

Table 12: Service Delivery Arrangements

Function	Model	Details
Professional Design and Professional Services	Internal delivery	In 2019 our internal Service Level Agreement was ended with the merging of City Networks and City Enterprises into a single Infrastructure Unit.
	External contracts (typically lump sum)	External resources are procured where internal capability or capacity is insufficient to provide specialist services such as architectural, financial, engineering and legal.

Function	Model	Details
Operation and Maintenance	Internal delivery	Mostly provided by the Waste Management Division and the Property Division
	External contracts (typically lump sum)	Mechanical plant maintenance (especially at the Material Recovery Facility) is contracted externally on an as-needed basis. The risks of having no performance-based contract include reduced quality and consistency reduced asset data capture and loss of knowledge when staff leave, and increased costs.
Construction and Major Renewals	External contracts (typically buildings)	Major construction is mostly associated with the buildings used to provide recycling services.
General Operations	Internal delivery	Collections Operators, Business Development, Project Support, Weighbridge Operators, Awapuni Site and Compost Operators, Sorting Line Operators are based at the Awapuni Resource Recovery Park.
	External contracts	We have a contract with MidWest for the disposal of solid waste from the Waste Management Activities ((Kerbside bag service, waste from illegal dumping, transfer stations, public litter bins and MRF) to the Bony Glen Landfill via the Matthews Avenue Transfer Station in Palmerston North. Labour is contracted for security and cover for operators. We contract Manawatu District Council (MDC) to undertake investigations and enforcement under the Litter Act for incidents of illegal dumping.
	Shared services	
Supply of materials and equipment, and plant	External contracts (typically lump sum)	Purchase orders are raised to supply as needed. Work order management will be improved under our ERP/Ozone replacement project, Te Huringa.

4.3 Asset Management Planning

The Asset Management Maturity Assessment (2019) found that the challenges facing the Resource Recovery Activity regarding Asset Management Planning were shared at an organisational level. Previous versions of the AMP have been shaped by limited engagement across the organisation. Thus, a key recommendation of the Maturity Assessment was to ensure that the AMP development is a collaborative process.

The development of this Asset Management Plan was led by the Asset Management Team and sponsored by the Waste Management Division. Teams responsible for the asset management functions that support the Resource Recovery (see Table 10 above) were engaged as key stakeholders to update the 2018 Resource Recovery AMP to this document. Before 2020, Asset Management Planning was largely the responsibility of the Resource Recovery Engineer and hence they assumed the role of Subject Matter Expert during this revision.

4.4 Management Systems

4.4.1 Asset Management System

The Asset Management Maturity Assessment (2019) also found organisational issues with the Management System:

- **Scope:** This is now defined in Section xxx of the SAMP.
- **Asset portfolio:** This is now defined in Section xxx of the SAMP.
- **Asset Management Functions:** Refer to Table xxx above in Section 4.1xxx.
- **Processes:** Few processes have been documented.
- **Asset Management Maturity Levels:** These were set during the 2019 Asset Management Maturity Assessment.

4.4.2 Interface Between Systems

How the Asset Management System interacts with our other core systems is not well defined including these systems:

- Business Assurance (Quality);
- Risk;
- Environmental;
- Human Resources; and
- Financial.

4.4.3 Business Process Mapping

For Resource Recovery, there are few processes mapped and heavy reliance on key people. Standard Operating Procedures however are well established where there are risks to quality or health and safety. This is expected to improve once the Asset Management Policy is adopted.

4.4.4 Asset Management Maturity Levels

The Resource Recovery Activity has an overall asset management maturity target of 80% and in 2019 the Activity was assessed and scored 52%, or Core level, described as:

"Well defined and clearly linked processes and practices are in place."

Figure 27 below shows how each of the Asset Management elements scored for the Activity.

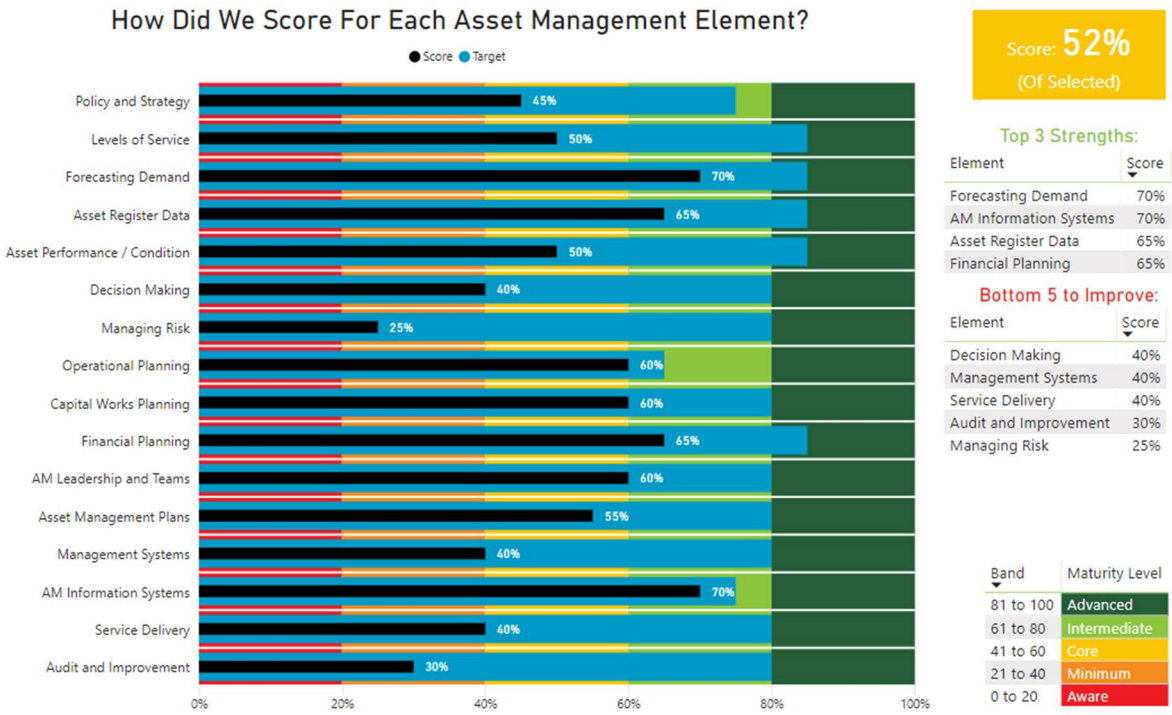


Figure 27: Asset Management Maturity Assessment Scores (2019)

4.5 Information Systems and Tools

Table 13 below contains a summary of the Asset Information System used by this Activity and commentary on recent improvements or issues. Further commentary on software specific to the Activity and data is provided below.

Table 13: Asset Information Systems

Component Type	Components	Improvements and Issues
Procedures and Standards	The Waste Management Division has begun documenting procedures in ProMapp. Standard Operating Procedures are saved in OASIS (document management system).	Procedures for asset information collection need to be developed for the Waste Management Division and staff training. Standard Operating Procedures however are well established where there are risks to quality or health and safety.
People	Dedicated role in Asset Information Team for asset data – Asset Information Analyst (3 Waters and Solid Waste). Dedicated role in Waste Management Division for service demand data – Waste Operations Support Officer.	The role of Asset Information Analyst regarding asset service demand data is not defined. Asset information integration with financial and customer service systems is limited and largely manual. Asset Information Analyst is now required to provide much needed Business Intelligence. Role of Information Management Staff and Waste Management staff not well defined.

Component Type	Components	Improvements and Issues
Data	Asset hierarchy in place. Asset naming convention in place. The asset register is complete enough for valuation purposes. Data confidence has been assessed.	No data collection programme in place. Data needs not fully scoped (i.e. criticality and condition data are not missing). Master data sets not identified (i.e. property addresses). No structured interview processes with staff to document asset knowledge.
Software	IPS Hansen, RAMM, SPM (asset as-built attributes, condition, maintenance, criticality, valuation details) Salesforce Quality Supply and Demand (QSD) (demand and consent compliance, reporting and analytics) Ozone (financial, corporate valuation) Kbase (Customer Requests) RCMonitoring App (consent management) ArcGIS (geographical information system)	Power Flow is now used to push data automatically from two Microsoft Forms into Salesforce QSD (windrow temperatures and event recycling). There is little integration of software and data movement relies on manual processes. Limited reporting and analytics.

4.6 Quality of Data Supporting the Plan

4.6.1 Asset Data Requirements

The quality of our asset data is the foundation to staff making evidence-based decisions when managing this Activity. The business processes for the capture and recording of data are not recorded. This includes when to collect data, what data is collected, how the data is collected and who should collect the data.

While we have enough information to complete asset valuation (basis attributes, replacement cost and asset age/life) we do not have criticality information to support the prioritisation of programmes.

4.6.2 Asset Hierarchy

An Asset Hierarchy for the activity has been established (refer to OASIS 2931127 and 2927045).

4.6.3 Data Management and Confidence Levels

Table 14 contains the data confidence levels for different asset attributes, which have been assessed using the confidence categories in Table 15. As data requirements are specified and data collection prioritised, it is expected that data confidence levels will increase.

Table 14: Summary of Asset Data Confidence Levels

Asset	As-Built Attributes	Condition	Repairs and Maintenance	Utilisation	Demand and Forecasts	Criticality	Risk	Resilience	Service Performance	Valuation	Financial Performance
Public space bins	4	1	1	1	2	0	0	0	3	5	0
Ashhurst Transfer Station and RDOP	3	0	2	3	4	0	0	0	0	5	0
Wheelie bins and crates	3	0	0	4	4	0	0	0	0	5	4
Ferguson Street RDOP	3	2	2	0	4	0	0	0	0	5	0
Awapuni RDOP	3	5	0	0	4	0	0	0	0	5	0
MRF including glass sorting (excluding building)	2	0	2	4	4	0	0	0	0	5	1
Awapuni composting	3	2	2	4	3	0	0	0	0	5	0
Awapuni grounds	3	2	2	2	0	0	0	0	0	5	0
Awapuni landfill gas extraction	3	2	2	1	1	0	0	0	0	5	0
Awapuni closed landfill	3	2	2	4	4	0	0	0	0	5	0
Ashhurst closed landfill	3	2	2	4	4	0	0	0	0	5	0
Bunnythorpe closed transfer station	3	2	2	4	4	0	0	0	0	5	0

Table 15: Asset Data Confidence Level Grading System

Confidence Grade	Description	Processes	Asset Data
5	Highly reliable/ Audited	A strictly formal process for collecting and analysing data. The process is documented and always followed by all staff. The process is recognised by the industry as the best method of assessment.	Very high level of data confidence. Data is believed to be 95 to 100% complete and ±5% accurate. Regular data audits verify a high level of accuracy in data received.
4	Reliable/ Verified	Strong process to collect data. It may not be fully documented but usually undertaken by most staff.	Good level of data confidence. Data is believed to be 80 to 95% complete and ±10 to 15% accurate. Some minor data extrapolation or assumptions has been applied. Occasional data audits verify a reasonable level of confidence.
3	Less Reliable	The process to collect data established. It may not be fully documented but usually undertaken by most staff.	Average level of data confidence. Data is believed to be 50 to 80% complete and ±15 to 20% accurate. Some data extrapolation has been applied based on supported assumptions. Occasional data audits verify a reasonable level of confidence.
2	Uncertain	A semi-formal process usually followed. Poor documentation. The process to collect data is followed about half the time.	Not sure of data confidence, or data confidence is good for some data, but most of the dataset is based on extrapolation of incomplete data set with unsupported assumptions.
1	Very uncertain	Ad hoc procedures to collect data. Minimal or no process documentation. Process followed occasionally.	Very low data confidence. Data based on very large unsupported assumptions, cursory inspection and analysis. Data may have been developed by extrapolation from small, unverified data sets.
0	No data	No process exists to collect data.	No data is available.

5. Description of Assets

5.1 Overview of Assets by Sub-Activity

We own some $31 Million worth of assets to provide our Resource Recovery services. These assets are managed around the materials we collect from customers at different locations.

Not all these assets are associated with current services – as shown in Figure 28 about half of our assets are associated with managing our closed landfills. A similar level of investment in waste minimisation assets reflects the importance of diverting waste from landfills in our strategic direction. We have one remaining rubbish transfer station at Ashhurst and while we provide a kerbside rubbish bag collection service, fleet are out of scope of this AMP and we do not own any other assets associated with the kerbside rubbish collection service. Our assets were revalued in March 2020.

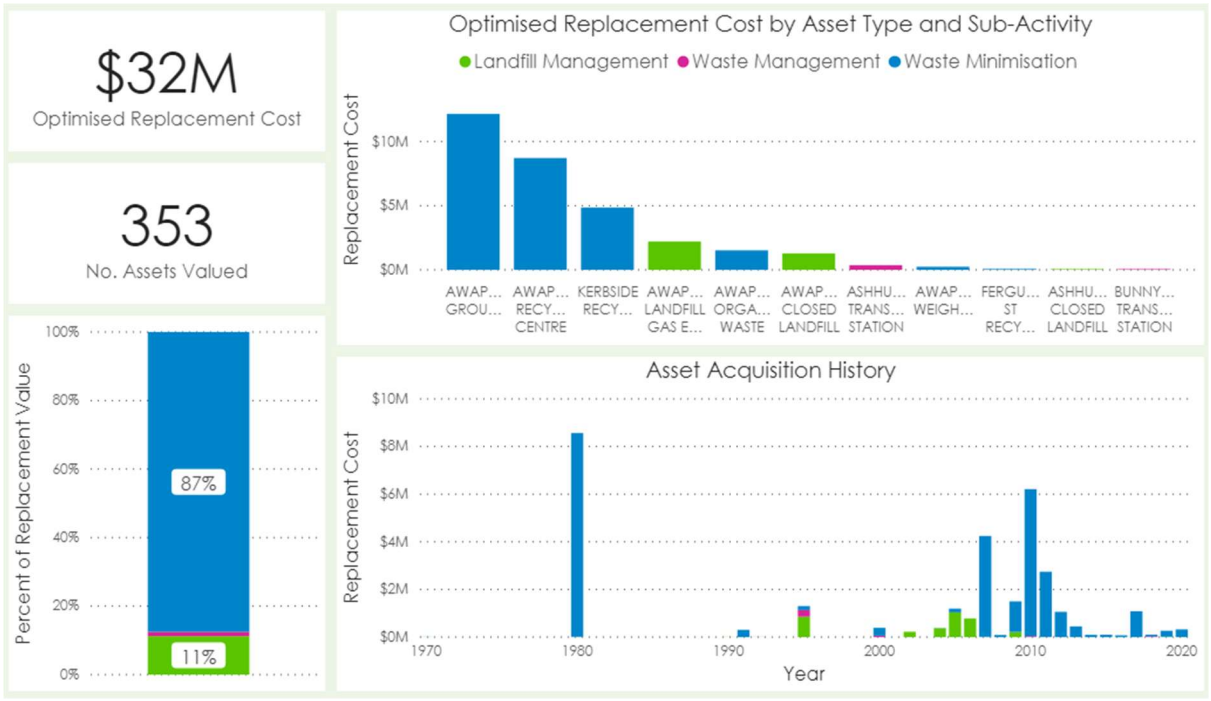


Figure 28: Optimised Replacement Cost (March 2020)

Key asset acquisitions include:

- In 1995 Awapuni Landfill was extended, with the closure of this landfill in 2007. The closed landfill was capped with clay and a landfill gas collection system.
- The Ashhurst Landfill was closed in 1995 and a refuse transfer station opened in Ashhurst.
- In 2007 the Material Recover Facility was constructed and for the next few years recycling was collected from the kerbside in boxes and bags until the kerbside recycling crates and bins were rolled out in 2010. The Material Recovery Facility continued to be upgraded over the next few years.
- Organic waste composting was also established in 2010.
- Note that the $8.5M in 1980 is nominal recognition of the Awapuni site.

The following sections describe the assets at each location.

5.2 Assets at Our Awapuni Resource Recovery Park

The Awapuni Resource Recovery Park is accessed from Tip Road (a sealed road owned by us) at the end of Maxwell's Line, Palmerston North. The Resource Recovery Park overlooks Marae Tarata, a site of

cultural significance to Rangitāne o Manawatū at the now confluence of the Mangaone and Manawatū River. The site is partially fenced with security fencing and contains the following:

- A Material Recovery Facility (MRF) for processing recyclables;
- A separate processing plant for mixed colour glass;
- Waste Management Staff offices and education centre;
- The Awapuni Recycling Drop Off Point;
- Weighbridge;
- Green waste drop-off;
- Composting operations producing both commercial compost and biosolids;
- Leased sites for recycling purposes; and
- Awapuni Closed Landfill and associated gas collection and flaring system.

5.2.1 Material Recovery Facility

Opened in 2007 by the then Prime Minister Rt Hon Helen Clark, the 2000m^2 Material Recovery Facility (MRF) has been designed to process up to four tonnes per hour of co-mingled recyclables on a single process line (see Figure 29). Co-mingled recyclables are separated using both mechanical and manual sorting processes into product streams of fibre (paper and cardboard), plastics and metals (steel and aluminium). Anything that cannot be recycled is also separated into the MRF waste stream. While we do provide public space bins and event recycling services, most materials for sorting come from our kerbside collection services, RDOPs, and commercial customers.

Figure 29: Material Recovery Facility Sort Line

Table 16 contains quantities of mixed recycling typically processed at the MRF.

Table 16: Typical Quantities of Mixed Recycling Processed by the Material Recovery Facility

Source of Mixed Recycling	Tonnes Processed 2018/19	Tonnes Processed 2019/20
Kerbside Collections	3740	3793
Commercial Arrangements	1202	1689
Recycling Drop Off Points	485	438
Total	**5427**	**5920**

As shown in Figure 30, the current layout of MRF creates a heavy reliance on the conveyors and processing machinery at the start of the line. Operation of those assets are critical to the operation of the entire plant and therefore proper planning, maintenance, and renewals need to be in place to ensure the continuation of the MRF's services.

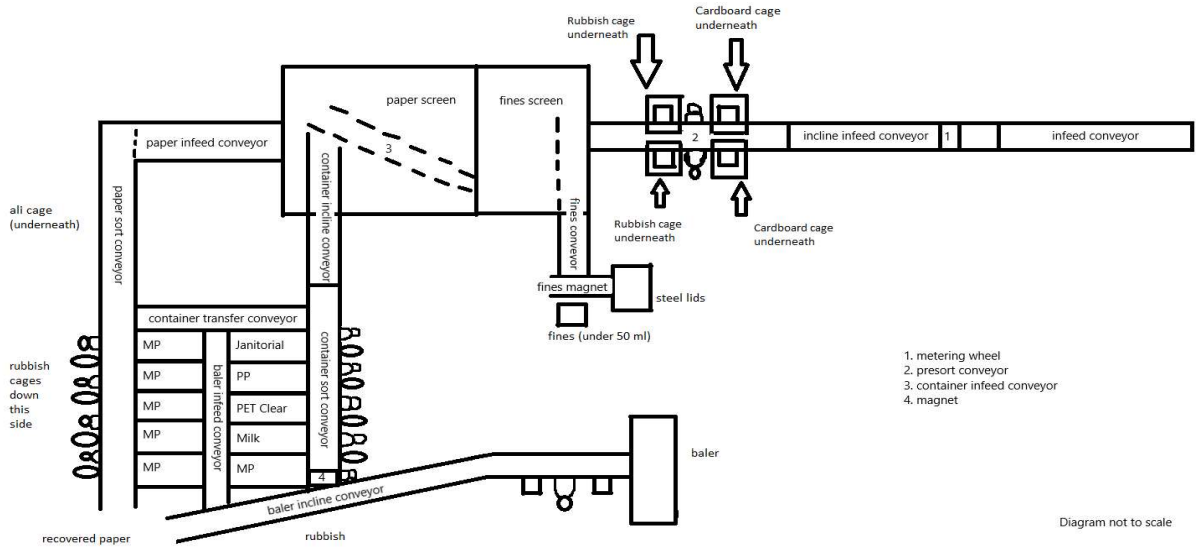


Figure 30: MRF Layout Diagram

As shown in Table 17 below most recovered materials are fibre (paper and cardboard). Note that the total product stream is greater than the inputs as about 15% of the fibre is supplied pre-sorted and is sold directly to our commodity traders.

Table 17: Typical Quantities of Product Streams Produced

Product Stream	Tonnes Produced 2018/19	%	Tonnes Produced 2019/20	%	Sorting Mechanism
Fibre	3957	65	4065	63	Mechanical and manual
Mixed Plastics	282	5	212	3	Manual
Steel Cans	251	4	278	4	Magnetic
PET Clear Plastic	244	4	248	4	Manual
HDPE Janitorial Plastic	98	2	103	2	Manual
HDPE Clear Plastic	92	2	97	1	Manual
Aluminium	79	1	81	1	Manual
Polypropylene	10	<1	24	<1	Manual
Waste/Contamination	1047	17	1363	21	Manual/Mechanical
Total	**6060**		**6471**		

Contamination of the mixed recycling has become more of an issue again and peaked after Level 4 and during Level 3 of the Covid-19 response as shown in Figure 31 below. From time to time this issue is managed by way of:

- Runners that inspect bins ahead of being emptied by the collection trucks;
- Stickering contaminated bins; and
- Education and behaviour change campaigns.

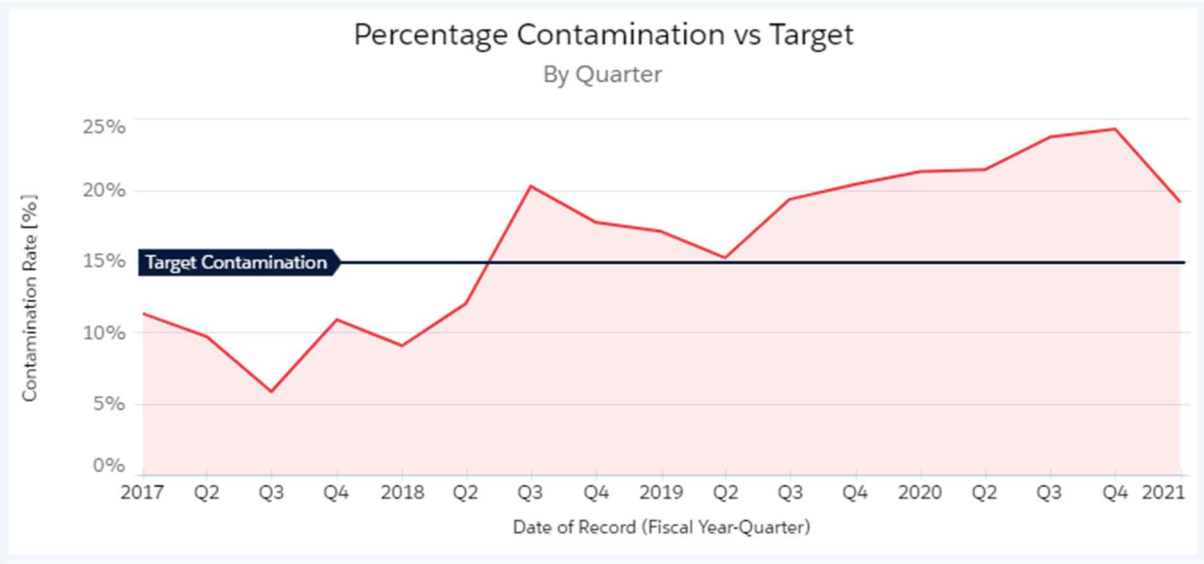


Figure 31: Mixed Recycling Contamination Trends

5.2.2 Glass Processing Facility

We currently sort glass by colour when it is collected and loaded onto our collection trucks. This allows us to deliver sorted coloured glass directly to our traders. Before this method, mixed glass was collected and taken to the glass processing facility at the Resource Recovery Park. On occasion, this still occurs, especially when glass collection trucks or operators are unavailable, hence the glass processing facility is still in operation.

The glass processing facility consists of an in-feed chute, a single conveyor situated inside a modified shipping container, and a series of bays into which the coloured glass is sorted. Unsorted mixed coloured glass remains stockpiled adjacent to the facility from a decade ago.

5.2.3 Waste Management Offices and Education Centre

In 2007 a single storey 340m^2 office and amenities building was built adjacent to the MRF. This comprises four offices, a visitor and education centre, kitchen, toilets, shower and storerooms. The education centre is used to undertake education programmes for students and researchers, interest groups and other visitors to increase the awareness of waste minimisation issues.

5.2.4 Weighbridge

We operate a weighbridge at the Awapuni Resource Recovery Park to track the amount of recycling our collection trucks pickup as well as product sales and movements of other materials on and off the site such as green waste.

The kiosk was renewed in 2019 and the single weighbridge was upgraded in 2017. The length of the weighbridge does not allow a truck and trailer unit to be weighed during one pass. Additionally, as there is only one weighbridge, vehicles leaving the site requiring a tare weight to be recorded must pass through the weighbridge for their tare weight to be recorded. This requires these vehicles to 'loop' around the kiosk.

5.2.5 Green Waste Drop Off

A hardstand drop-off area is maintained for the public to unload green waste at the Resource Recovery Park. For health and safety reasons the area is kept separate from the compost windrow operations and

the wastewater treatment plant sludge handling area. The area is cleared of green waste by a frontend loader[5].

5.2.6 Composting Operations

Closely associated with the green waste drop-off is our compost operation that produces two streams of compost products:

- Commercial grade compost that is sold to the public, with a portion made available free of charge to community groups, schools and education facilities; and
- Composted Biosolids are spread over the landfill to protect the clay capping from damage, and to create a medium for planting.

The compost operation is authorised by resource consents (refer to Appendix C for further details) from Horizons Regional Council and the biosolids area is required to have its drainage system that diverts runoff to the Tōtara Road Wastewater Treatment Plant for treatment. Runoff from the commercial area is directed with stormwater drainage to a soakage pond that is monitored as part of the closed landfill resource consent.

Additional dedicated hardstand areas are maintained for receiving different organic inputs from industries, stables and our food waste collections. There is a significant amount of mobile plant and equipment that is used for shredding green waste and forming windrows which are outside the scope of this AMP.

5.2.7 Leased sites

Four areas of the Awapuni Resource Recovery Park are leased for the following activities:

- OJI Fibre;
- Scrap metal recycling;
- Reclaimed timber; and
- Asphalt production plant and concrete processing.

OJI Fibre

OJI lease just under half of the Materials Facility Building for the processing and baling of fibre (paper and cardboard) collected from their operations in the Lower North Island, they also lease office space and a store romm at this location.

Scrap Metal Recycler

An area of approximately 5000 m^2 is leased for scrap metal recycling. The fenced area has a power supply and concrete pad for the metal baler. The site has been operating under the existing lease since 2017. The buildings on site are owned by us, with mobile assets owned by the leaseholder.

Reclaimed Timber

An area of approximately 2600 m^2 is leased for timber recycling. The fenced area includes the former recycling building (315 m^2 steel clad shed) which is owned by us, with mobile assets on this site owned by the leaseholder.

[5] Fleet management is not part of the AMP scope.

Asphalt and Concrete processing

An area between Tip Road and the Tōtara Road Wastewater Treatment Plant is leased for concrete production and asphalt batching. This lease is a land lease only, with the buildings and plant located at this site are owned by the leaseholder.

Quarry Site for Metal Extraction

Some 13,300 m^2 of riverside land was previously leased for metal extraction but the leaseholder ceased its operations at this site in 2019.

5.2.8 Awapuni Recycling Drop Off Point (RDOP)

The Awapuni RDOP was renewed in 2019 to improve the experience for our customers. At the new RDOP customers can drop off paper and cardboard, plastics, metals and colour sorted glass into separate receptacles as shown in Figure 32 below.

Figure 32: The New Awapuni RDOP

5.3 Assets at our Other Street Recycling Drop Off Points

5.3.1 Ferguson Street Recycling Drop Off Point

The Ferguson Street RDOP comprises four areas:

- Timber-framed building (20.6 m x 8.8 m x 4 m high) constructed on a reinforced concrete floor slab. It is serviced with power, water supply, and telephone. Fibre (Paper and Cardboard), e-waste, engineoil, car oil filters, cooking oil, batteries and child car seats are dropped off here for recycling. Some items incur a fee for recycling.
- Outside covered area with, fibre (paper and cardboard), plastics, steel and aluminium tins and cans, and glass bottles and jars, with CCTV security cameras and lighting.
- 100 m^2 sealed handling and storage area behind the RDOP building.
- Sealed customer parking at the front of the RDOP building.

This RDOP was renewed in recent years and the new facility is shown in Figure 33 below.

Figure 33: Ferguson Street RDOP

5.3.2 Ashhurst Recycling Drop Off Point

Two modified shipping containers, as shown in Figure 34 below, with posting holes and internal partitions is located on the outside of the Ashhurst Transfer Station. This allows it to be transported to the Awapuni MRF for emptying and sorting. These are leased from Envirowaste.

Figure 34: Recycling Drop Off Facility for Ashhurst

5.4 Assets Associated with our Transfer Stations

5.4.1 Ashhurst Transfer Station

The Ashhurst Transfer Station was built in 1995, the same year that the Ashhurst Landfill closed. The 1000 m^2 site (see Figure 35 below) has security fencing, a concrete ramp for unloading rubbish and green waste into hired skip bins and a kiosk for staff.

Figure 35: Ashhurst Transfer Station

5.4.2 Closed Bunnythorpe Transfer Station

The Bunnythorpe Transfer Station was transferred from Manawatū District Council to our ownership in 2012 when the Council boundary was adjusted. The 1800 m^2 facility was closed in 2017 due to low usage and recovery, and relatively high costs making it economically unviable. A decision on the future of the property is yet to be made.

5.5 Assets Associated with our Closed Landfills

5.5.1 Awapuni Closed Landfill

The Awapuni landfill was operational from 1950 to 2007, during which time an estimated 2.5 million tonnes of rubbish was disposed of. The most recent extension of the landfill in 1995 was lined (indicated in Figure 36 below), and leachate is pumped to the Tōtara Road Wastewater Treatment Plant for treatment. The Awapuni closed landfill has consents that expire in 2029 that include the requirement for a closure management plan.

The entire landfill has a clay cap to prevent stormwater rainfall ingress and therefore minimise leachate. The clay cap also traps landfill gasses which can be syphoned off via the 2km long gas collection system (installed in 2006). A consented gas flare is located on-site if needed but most of the gas is now piped to the electricity generator at the Tōtara Road Wastewater Treatment Plant. Planting of approved native bush species is undertaken from time to time. Stormwater drainage on the site directs most runoff to a soakage pond, shallow groundwater monitoring bores are installed around the periphery to monitor for potential leachate.

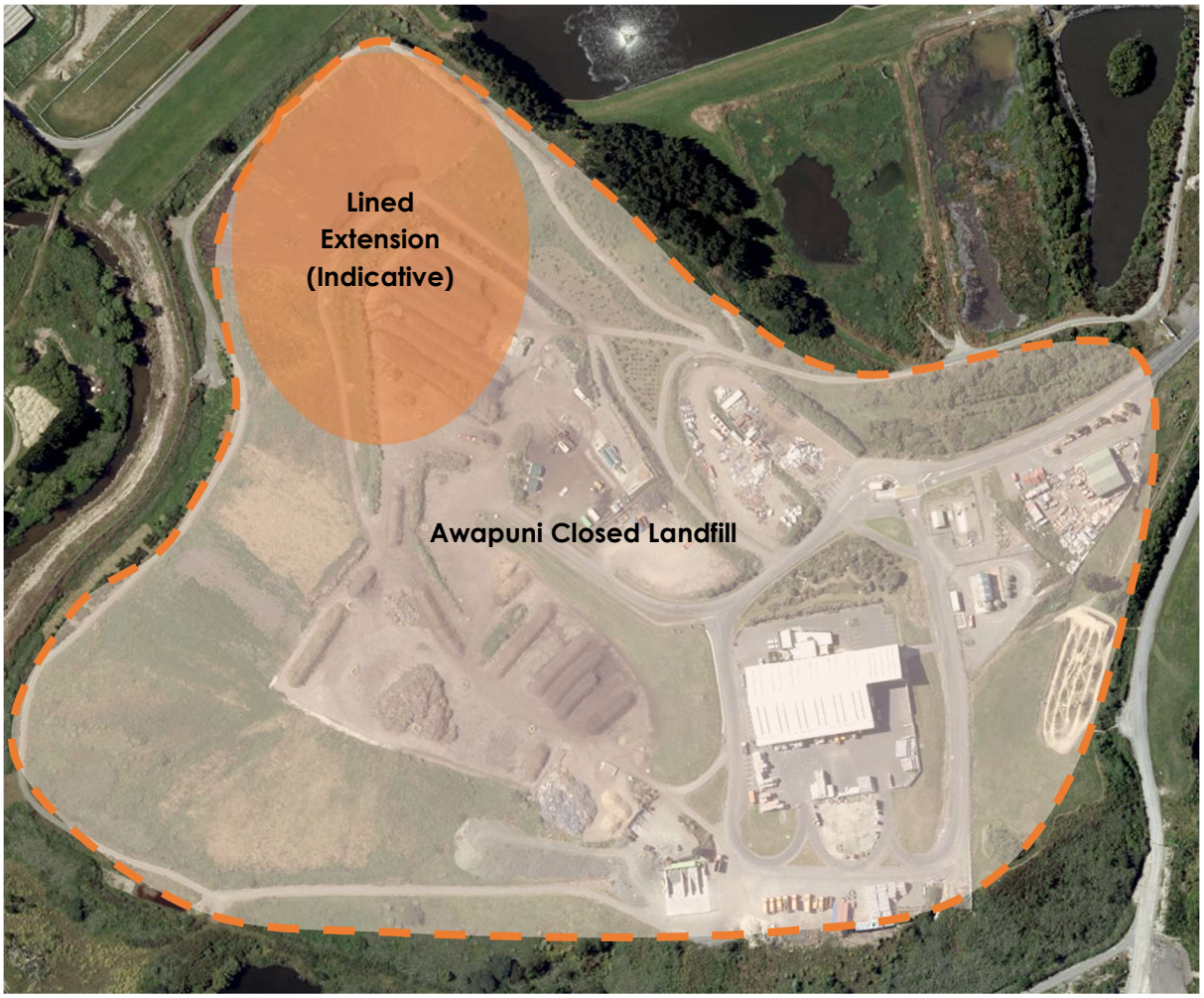


Figure 36: Aerial Photo (2019) of Awapuni Closed Landfill

5.5.2 Ashhurst Closed Landfill

The Ashhurst Closed Landfill site occupies an area of 1.1 ha, with the landfill itself occupying about half of this. Approximately 15,000 m^3 of rubbish was disposed of at the Ashhurst Landfill between 1950 and 1995 before it was closed. The landfill is unlined and clay capping is only applied to the top as the sides are too steep and close to waterways to enclose with soil. Where possible, pine trees have been planted on the sides to stabilise them. This landfill is also consented and has ongoing monitoring and reporting obligations with Horizons Regional Council.

5.6 Assets Associated with our Collection Services

When the wheelie bin kerbside collection service was introduced in 2010, we bulk purchased enough bins for our customers plus some stock for replacements. Currently, we have about 2,500x 80L, 29,500x 240L and 30x 660L wheelie bins for our residential and commercial customers.

These wheelie bins are also suitable for food waste collection and can be allocated to commercial customers. Similarly, in 2010 we also bulk purchased crates for our glass recycling (with some smaller purchases since) and have nearly 30,000 45L crates. Figure 37 shows our 240L wheelie bin and glass crate.

Assets associated with the rubbish bag collections services are outside the scope of this AMP.

Figure 37: Recycling Wheelie Bin and Glass Recycling Crate

5.7 Other Assets that Benefit the General Public

5.7.1 Public Space Bins

We provide 694 rubbish and recycling bins in strategic locations and have been standardising the bins as they come up for replacement or at the same time as streetscape and park upgrades. A strategic placement review in recent years has also seen the removal of some bins. Public space bins located within parks and reserves that have staff on site are serviced by Parks and Reserves Division Staff. We are also trialling three solar compacting bins.

5.7.2 Illegal Dumping

All assets used to support the investigation, collection and disposal of illegally dumped rubbish are outside the scope of this AMP.

5.8 Asset Challenges and Issues

Table 18 contains a summary of the main challenges in terms of the level of risk and investment. Overall, as mentioned in Section 38 there has been minimal investment in new assets in the last 10 years and there has been a slight increase in asset renewals and maintenance costs in the last five years.

Table 18: Asset Challenges by Location and Service

Material	Site	Key Assets	Asset Challenges
Waste Minimisation			
All	Awapuni Resource Recovery Park	Waste Management offices and education room	Insufficient staff amenities. Under-utilisation of education room for education purposes
Organic and Green Waste	Awapuni Compost Operations	2 hot rot composters Trommel screen Drainage and hardstand areas	Hot rot composters are out of service and have high maintenance costs. Trommel screen due for replacement shortly
	Commercial	Food waste wheelie bins	Customers are required to maintain the cleanliness of bins.
	Ashhurst Transfer Station	Land Loading zone	Previously over utilised due to low fees. Health and safety hazards to staff and the public require active management. Small site, scope for expansion limited
Mixed Recycling Glass	Residential and Commercial kerbside	80L and 240L wheelie bins 45L crates Collection trucks (out of scope)	Radio frequency identification tags have been recently installed to monitor presentation rates and the location of bins assigned to customers. Commercial customers need more options.
	Awapuni Resource Recovery Park	Material Recovery Facility	Contamination is increasing operating costs (labour to process and waste disposal fees).
	Ashurst RDOP	Mobile recycling receptacle	Isolated location is prone to vandalism and contamination resulting in poorer yield. Glass collected mixed which reduces yield.
	Awapuni RDOP	Recycling receptacle	Recently replaced to standardise and improve customer experience.
	Ferguson Street RDOP	Recycling receptacle	Upgraded to improve customer experience.
Mixed Recycling Glass	Public spaces	Recycling bins Three solar compacting bins	Vandalism of bins, requiring immediate replacement. Bins standardised as renewed.
	Events	Events recycling trailers	Recently developed service
Household Chemicals	Ferguson St RDOP	Oil containers	Contracted
	Hazardous Waste Event	Hazardous waste facilities	Contracted
E-Waste	Ferguson St RDOP	None (storage only)	Recycling provided by contractor

Material	Site	Key Assets	Asset Challenges
Waste Minimisation (Continued)			
Car Seats	Ferguson St RDOP	None (storage only)	Recycling provided by contractor
Waste Management			
Rubbish	Residential kerbside	Rubbish trucks (out of scope)	-
	Ashhurst Transfer Station	See Green Waste above	See Green Waste above
	Public spaces	Rubbish bins	Vandalism of bins, requiring immediate replacement. Standardised as renewed.
	Illegal dumping	Rubbish truck (out of scope)	
Landfill Management			
None	Awapuni Closed Landfill	Clay lining Clay capping Leachate collection system Landfill gas collection system Gas flare	Consented and requires monitoring for compliance. Renewal of consent may result in investment in further mitigation of environmental impacts. Located by waterways of cultural significance to Rangitāne o Manawatū. Declining gas production will lead to the disposal of the gas line to an electricity generator at Tōtara Road Wastewater Treatment Plant.
	Ashhurst Closed Landfill	Clay capping Land	Consented and requires monitoring for compliance. Located by waterways of cultural significance to Rangitāne o Manawatū. Minimal maintenance required.

5.9 Asset Condition and Performance

Asset condition is largely theoretical based on age as little actual condition data is recorded in our asset information systems. Figure 38 below shows the theoretical condition of the assets by sub-activity held in IPS (excludes property assets, land and public space bins). The condition score is calculated using the expected life and age of the asset. The average theoretical asset condition is moderate, but attention needs to be given to aging assets (condition 4 or greater) assets associated with the landfill gas collection, compost hardstand areas and operations.

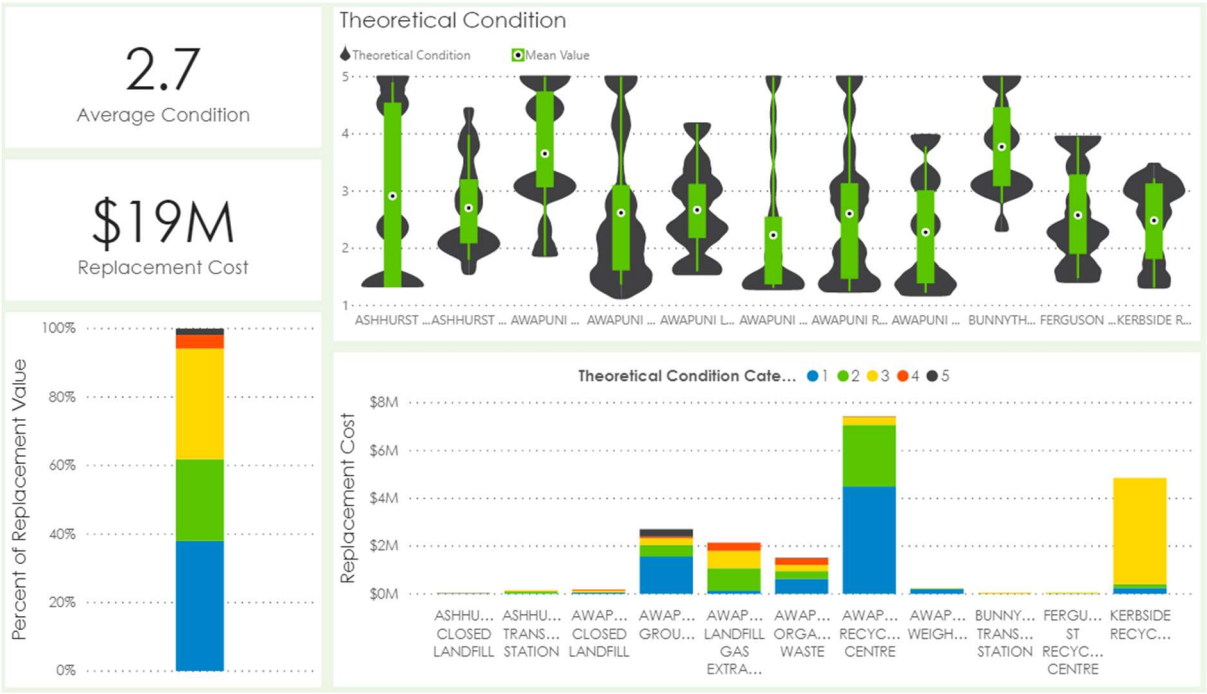


Figure 38: Theoretical Asset Condition Based on Age

Asset performance is relatively unassessed and is monitored primarily through customer levels of service performance. It is assumed most assets have a good asset performance grade.

6. Risk Management

6.1 Risk Context

This section focuses on risks to do with the management of the Resource Recovery Activity and the enabling infrastructure.

Risk management requires urgent attention as an organisation to better improve risk management at the Activity Level. The corporate risk register is currently being reviewed, after which, risks relevant to the management of this Activity will be identified (refer to the 2018 Resource Recovery AMP for details of the risks identified at the time).

6.2 Criticality of our Services

6.2.1 Essential Services

In 2009 (see OASIS 1731539) kerbside rubbish collection and disposal was identified as an essential service to meet public health requirements but not the collection of recycling.

The impact of non-collection of commercial and household waste may impact Health and Safety to both the public and our staff, through issues such as potentially increased exposure to pathogens from waste, vermin and animals. Also, potential aesthetic issues from uncollected waste, unpleasant smell and odours.

6.2.2 Critical Customers

Critical customers are those relying on our essential kerbside rubbish collection service, that is:

- Households; and
- Businesses in the CBD.
- Commercial busineses within the collection area?

In the event of a major disruption of service establishing at least a temporary rubbish collection for critical customers would be a priority.

6.2.3 Critical Suppliers

Critical suppliers are those providing services required for the delivery of our essential kerbside rubbish collection service. The following support services are critical:

- Radio communication
- Rubbish disposal (MidWest Disposals)
- Rubbish Bag supplier for Kerbside Rubbish Bags
- Fleet
- Fuel
- Access to our site at Awapuni

Services that are deemed as not required are:

- Power
- Water supply services;
- Access to our buildings;
- Information Management

6.3 Criticality of our Assets

Critical assets are defined as those assets with the highest consequence of failure regardless of the probability of failure.

The level of importance or criticality of the Resource Recovery Assets is understood by Waste operations staff but is not documented or recorded in IPS. This has been identified as a high priority improvement item as knowing the criticality of assets would help to prioritise renewals and would better inform maintenance budgets and our risk profile. Once asset performance and asset criticality have been determined we will be able to complete our asset risk profile as shown in Figure 39 below.

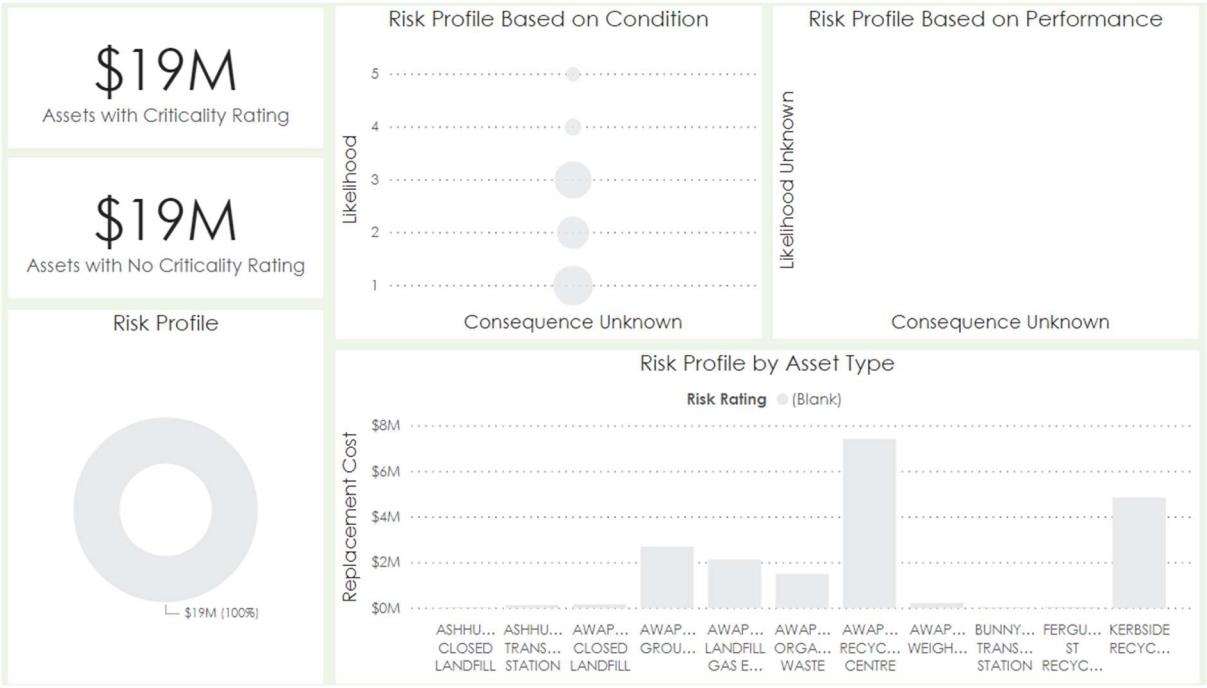


Figure 39: Risk Profile of Assets

6.4 Activity Risks

Risk management at the Activity level is being reviewed. While effective at an operational level, risks are mostly managed as they arise, and localised/short term responses are developed to deal with issues.

Risk identification workshops were carried out with Waste Management staff in August 2020 and need to be submitted to the organisational register once developed and managed per the organisational framework. The type of Activity risks should be identified in terms of whether they are planning, management, delivery or asset risks. The risks analysis needs to be completed including the assessments of the risks, their mitigation and treatment options, updating the Risk Action Plan, and putting in place monitoring and reviews.

Previously, a risk analysis was carried out by GHD in 2011 and identified 22 risks (refer to OASIS 2922994). Table 19 contains the top twelve risks that have a raw risk rating of High or Critical and their cause and consequence. Note that risk owners need to be updated based on the new organisational structure.

Table 19: Activity Management Risks

Risk Ref.	Risk Descriptor	Cause	Consequence	Raw Risk
SLW02	Lack of Skilled Staff Resources	Inability to attract key staff Inability to retain skilled staff The inability of external resources to provide	Operational loss Financial costs Loss of service level Poor (or no) decision making	High
SLW04	Failure to deliver on projects and programmes	• Inadequate project, programme and portfolio management • Lack of training or qualified staff • Lack of project planning or systems • Projects inadequately scoped, budgeted, managed, documented, and reviewed • Inadequate community consultation and management of expectations • Unrealistic expectations • Insufficient input to 10 Year Plan (financial) • Lack of resources • Lack of ownership, change of leadership • Cost Escalations (e.g. price of materials, economic failures, exchange rates)	• Time & cost blowouts • Lack of quality outcomes • Loss of service level • Loss of image and credibility • Impact on staff morale • Over/underspending of budgets • Failure to deliver on commitments e.g. 10 Year Plan • Deferring of projects • Hindering development • Public health and environmental consequences	High

Risk Ref.	Risk Descriptor	Cause	Consequence	Raw Risk
SLW05 SLW06	Inadequate contract management	• Inadequate documents • Inadequate selection, availability of the contractor • Inadequate management of contractors i.e. communication, monitoring etc.	• Poor contractor performance and outputs • Interruption to services • Loss of service levels • Health and environmental incidents • Failure to meet legislative requirements • Additional costs • Excessive deterioration of assets	Critical
SLW08	Non-compliance with the legislation and legal requirements	• Lack of awareness e.g. changes in legislation not identified • Lack of funding • Legislative changes increase statutory obligations to a level where they are unable to be met with existing resources (goalposts shift) • Disputes with regulatory authorities	• Compromised health, safety and environment • Legal action and resulting costs and consequences • Poor public image	Critical
SLW10	Moderate Natural Hazards – (minor earthquake/landslips / major storm event) Inability to minimize effects	• Strategic information is inadequately protected • Internal and external risks not adequately identified • Possible impacts of disasters are not proactively minimised • Inadequate understanding of staff of disaster recovery procedures • Inadequate documentation to support the recovery process • Civil Defence not adequately resourced	• Inability to respond to, or effectively manage and recover from disaster or emergency • Inability to operate the business under normal conditions • Destruction of, or prolonged widespread damage to infrastructural assets • Hindering development • Negative image • Actual or high probability of loss of life	Critical

Risk Ref.	Risk Descriptor	Cause	Consequence	Raw Risk
SLW11	Lack of Political Alignment or inability of Elected Members to fulfil roles and responsibilities or disregard for community and/or staff views.	• Lack of communication with elected members • Lack of understanding from elected members	• Essential services under-resourced • Decisions made on political grounds ahead of defensible decision making	High
SLW12	External Economic Influences	• Cost Escalations (e.g. due to oil price increases, economic failures). • Uncontrollable movements in the economy e.g. exchange rates, prices of local products drop • Local unemployment	• Financial impact cost of services • Inability to provide services, maintain service levels or achieve community outcomes	High
SLW14	Diminishing Funding Allocation	• A decreased subsidy, rates, tax, development contribution charges • Insufficient external funding secured	• Projects unable to proceed • Inability to provide services, maintain service levels or achieve community outcomes	High
SLW15	Ineffective strategic planning (internal)	• Lack of integration between the different arms of Council pursuing objectives that are at odds with each other. • Change of Councillors or Mayor	• Eventual loss of service levels • Funding loss	High
SLW16	Inadequate Communications and PR Management	• Poor communication e.g. provision of too much/ not enough information to the public • Inadequate strategic planning • Ineffective consultation • Historic perception of expectations	• Increased costs • Poor relations between council and community • Negative publicity and reputation • Lack of public support for works and new initiatives • Difficulty getting consents	High

Risk Ref.	Risk Descriptor	Cause	Consequence	Raw Risk
SLW17	Building or Structure failure	• Building defects • Lack of maintenance • Poor management	• Closure • Environmental incident (spillage or explosion) • Contaminated environment • Odours • Breach of consent conditions • Public health incident • Injury or death • Negative media coverage • Loss of rental, sales and fees income	High
SLW18	Plant Equipment or Operations Failure	• Lack of maintenance • Poor management • Extreme weather event (e.g. flooding, scouring of riverbanks) • Power failure	• Closure • Environmental incident (spillage or explosion) • Contaminated environment • Odours • Breach of consent conditions • Public health incident • Injury or death • Negative media coverage • Loss of rental, sales and fees income	High
SLW19	Lack of security at the facility	• Lack of resources • Inadequate design • Security lapse	• Theft • Damage • Health and Safety Incident • Closure • Loss of Revenue	High
SLW22	Recycling receiving services no longer require materials	• Lack of demand • Oversupply • Business failure • Global commodity prices	• Inability to dispose of recyclables • Extra costs • Increased waste volumes	High

The 2011 risk analysis Risks were assessed and only one (1) risk, reference SLW10, had a net risk level of high. Table 20 below contains a progress update for SLW10.

Table 20: Risk Action Plan – Progress Update for High Net Risk Items

Risk Ref.	Risk Descriptor	Net Risk	Management Options Available	Progress Update (Dec 2020)
SLW10	Moderate Natural Hazards – (minor earthquake/landslips / major storm event) Inability to minimize effects	High	Incident Response Plan Critical assets identified and maintenance regime based around these Criteria for new critical infrastructure construction	Business Continuity Plan created. Revised during Covid-19 response. Critical assets not yet identified.

Note that Safety in Design considerations are currently not captured systematically in the planning of new assets and we rely on the service delivery teams to assess safety requirements in the construction, operating and maintenance and disposal of assets.

6.5 Disaster Resilience

6.5.1 Hazards

Resilience is "the ability to anticipate and resist the effects of a disruptive event, minimise adverse impacts, respond effectively post-event, maintain or recover functionality, and adapt in a way that allows for learning and thriving" (National Disaster Resilience Strategy 2019).

In New Zealand, to prepare for disasters, we classify risks in five categories:

- Natural hazard risks;
- Biological hazard risks;
- Technological risks;
- Security risks; and
- Economic risks.

Our asset planning considers the resilience of the just the built environment only and while we have not formally assessed this for our critical assets, some commentary on the risk categories are provided below.

Natural Hazards

The impact of extreme weather, earthquakes and volcanoes on our critical assets needs to be assessed. The Lifelines Project Report 2005 found that the region is most at risk from a seismic hazard. However, in recent years, several closed landfills around New Zealand have been damaged by floods, causing loss of hazardous material into waterways. The Awapuni Closed Landfill is adjacent to the Manawatū River and we are actively monitoring erosion of the river bend towards the landfill at the end of Tip Road. We also do not have a Standard Operating Procedure for dealing with the disposal of volcanic ash in the event of an eruption.

Biological Hazards

Our response to Covid-19 provides us with the opportunity to better assess the impact of biological hazards on our rubbish and recycling services.

Technology Risks

Technology risks are largely managed by our Information Management team but there is an opportunity to better understand the impact on this Activity.

Security Risks

Security risks are largely managed by our property team and this has prompted a recent review of our building access and security, including at our Waste Operations staff facilities and the Material Recovery Facility at the Awapuni Resource Recovery Park.

Economic Risks

Changes in the global recycling markets are having an impact on our Activity. We are fortunate that we have local and national commodity traders that are still able to take most of our products, but at a lower price so our revenue has decreased.

6.5.2 Minimum Service Requirements During A Disaster

Yet to be determined.

6.5.3 Desired Resilience Levels Versus Current Levels

Yet to be assessed.

6.5.4 Resilience Investment

Currently, no additional assets have been identified to provide the desired level of resilience.

6.6 Business Continuity Planning

A Business Continuity Plan has been prepared for Waste Operations (OASIS 230863). The Plan details strategies including co-ordination of people and resources that will enable continued availability of business process and services and recovery from events that interrupt those services, such as:

- The call tree.
- Incident Management Team.
- Water & waste services continuity and recovery strategies:
  - Accessibility, Resources and Communication;
  - Add specifics for waste
- Contact Lists for both internal and external contacts.

The Business Continuity Plan (BCP) was utilised and revised during 2020, due to the Covid-19 pandemic. The Emergency Operations Centre was opened, and contingency plans were put in place.

7. Levels of Service

A key objective of this AMP is to ensure that assets support the delivery of the agreed levels of service in the most cost-effective manner. This requires a clear understanding of levels of service, now and in the future.

The SAMP defines levels of service (LoS) as statements that describe the services Council intends to deliver to its customers. Levels of service are used to:

- Inform customers of the level of service they can expect;
- Enable customers to assess suitability, affordability and equity of the services offered;
- Focus asset management strategies to deliver the required level of service;
- Enable the measurement of the effectiveness of this AMP; and
- Identify costs and benefits of the services provided.

The process for the development and monitoring of levels of service is outlined in the SAMP. This section of the AMP documents each of these steps for Resource Recovery identifies any issues or service gaps (current and future), and the plans to address them.

7.1 Establishing Levels of Service

Figure 40 outlines the three main inputs into establishing the levels of service.

Figure 40: Level of Service Components

7.1.1 Strategic Direction

The strategic direction for the Resource Recovery Activity is described in Section 2 of this AMP. Our strategic goals guide the community expectations that need to be delivered now and in the future. The supporting plans describe actions and targets for levels of service we wish to achieve.

These provide guidelines for what outcomes are required for the current and future services offered, the manner of service delivery, and the specific levels of service which the organisation seeks to achieve.

7.1.2 Statutory Requirements / Standards

Acts, Regulations, Standards and Council Bylaws that impact the way assets are managed (i.e. resource consents, building regulations, health and safety legislation). These requirements set the minimum level of service that must be provided.

7.1.3 Customer Expectations

The way our customers utilise our services varies significantly depending on what and how much they are recycling and/or disposing of.

Community expectations relating to recycling and waste minimisation are anticipated to lead to increased demand for recycling services but not dramatically.

Customer expectations include:

- Rubbish disposal is safe, reliable, clean, convenient, affordable and protects the environment.
- Recycling is safe, reliable, clean, convenient, affordable and extensive (wide range of materials accepted).

7.1.4 Customer Feedback

There is no indication that user values and expectations have changed significantly for this Activity since the 2018 AMP. The 2020 Annual Residents Survey showed that for waste management residents are generally happy with all aspects, particularly kerbside rubbish and recycling collection. The Village and Rural areas were the least satisfied with the kerbside services as shown in Figure 41 below.

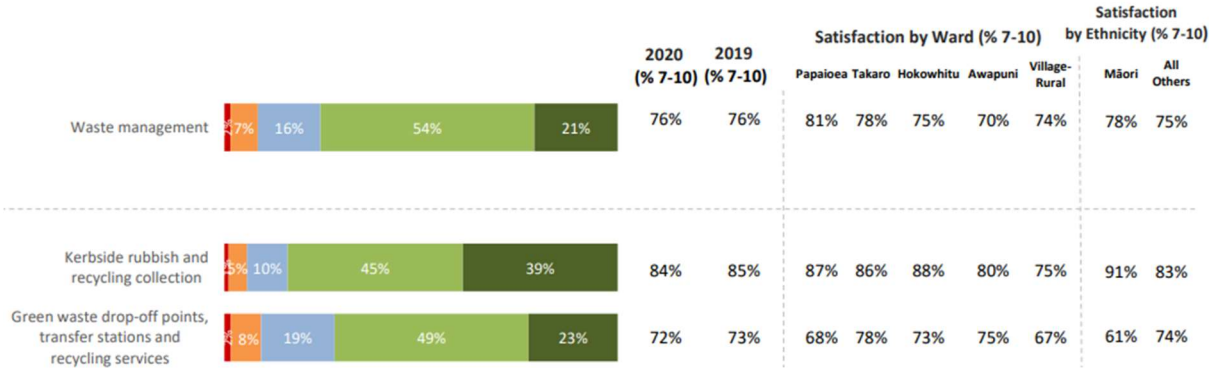


Figure 41: 2020 Residents Survey

Council undertakes ongoing user engagement using the methods identified in Section 12.3 of the SAMP. This engagement information is supplementary to the 2005 full review conducted for levels of service with the wider community.

7.1.5 Review of Current Level of Service

Staff Workshops

In November 2019, a workshop with staff involved in decision making relating to Resource Recovery infrastructure was held. The staff were asked to use their knowledge and experience to identify customers, what was important to them (values), and the services they expected from us.

The information was collated, and themes checked against the existing knowledge of customers and levels of service. The information was consistent with existing knowledge, though some new themes responding to environmental outcomes were not present in existing measures.

Elected Member Workshops

Workshops were held with Elected Members during 2019 and 2020 to inform the development of key documents used to inform the 10 Year Plan. This included the SAMP and this AMP.

In November 2019, Elected Members reviewed Council's Vision, Goals and Strategies developed as part of the 2018 10 Year Plan. In May 2020, Elected Members reviewed the strategic priorities and key actions for each of the plans. This workshop also provided staff with an opportunity to present any suggested additions or updates to Levels of Service following the staff workshops.

Elected Members indicated overall satisfaction with the existing priorities for the Resource Recovery Activity and as an extension of this, existing levels of service.

7.2 Existing Customer Levels of Service (2018/19 – 2020/21)

Our 10 Year Plan consultation process confirms the service attributes and their performance measures that we will report on. Table 21 below contains a summary of the existing Service Attributes and Levels of Service Statements as agreed through the 10 Year Plan 2018-28. Other service attributes that are important to our rubbish and recycling services but are not publicly reported on are public health, safety, resilience, and reputation.

Table 21: Existing Customer Levels of Service (2018/19 – 2020/21)

Services	Service Attribute	Levels of Service Statements
All	Reliability (collections) Environmental impact Provision	We provide: • a kerbside solid waste collection service • a kerbside recycling collection service • a commercial kerbside food waste and recycling collection service • recycling drop-off points • a green waste drop-off service • a compost service to manage waste in an environmentally responsible manner and maximise the amount of waste diverted from landfill.
All	Financial /affordable	We manage our Resource Recovery Activity in a financially sustainable way.

7.3 Performance Against Existing Levels of Service

Table 22 summarises the customer performance measures and their rating for the last three financial years.

Table 22: Performance Against Existing Levels of Service (2018/19 – 2020/21)

Levels of Service Statements	Customer Performance Measures	Rating
We provide: • a kerbside solid waste collection service • a kerbside recycling collection service • recycling drop-off points • a green waste drop-off service to manage waste in an environmentally responsible manner and maximise the amount of waste diverted from landfill.	Rubbish and recycling placed in our official bags or bins are collected on the stated day (at least 98%)	
	Compliance with resource consents for the Resource Recovery Activity measured by the number of: • abatement notices • infringement notices • enforcement orders • convictions	
	A 30-year Asset Management Plan is in place and major AMP projects approved in the 10 Year Plan are achieved.	
We manage our Resource Recovery Activity in a financially sustainable way.	Major services and projects are provided within budget.	

7.4 Performance Measures for 10 Year Plan 2021-31

Table 23 contains a summary of the Performance Measures and their targets for the first three years of the 10 Year Plan 2021-31.

Table 23: Performance Measures for Years 1-3 of the 10 Year Plan 2021-31

Customer Performance Measures	Targets 2021/22	Targets 2022/23	Targets 2023/24
Rubbish and recycling placed in our official bags or bins are collected on the stated day.	At least 98%	At least 98%	At least 98%
Compliance with resource consents for the Resource Recovery Activity measured by the number of:			
• abatement notices	• None	• None	• None
• infringement notices	• None	• None	• None
• enforcement orders	• None	• None	• None
• convictions	• None	• None	• None
A 30-year Asset Management Plan is in place and major AMP projects approved in the 10 Year Plan are achieved.	Projects achieved	Projects achieved	Projects achieved
Major services and projects are provided within budget.	Services and projects within budget	Services and projects within budget	Services and projects within budget

7.5 Level of Service Gaps

7.5.1 Existing Gaps

As summarised in Table 22 above all customer performance targets are being met and there are no gaps in levels of service.

7.5.2 Forecast Gaps

The most likely customer performance measure that is not going to be met in the future is the provision of our services within budget. This is mainly due to existing budgets no longer being enough, as follows:

There is a risk that maintenance and renewal budgets set under the 10 Year Plan 2018-28 become inadequate as our assets age. There is also a risk of reduced revenue from selling recyclables, which could also cause problems with meeting budgets in the future. Both issues are dealt with in more detail in Section 9 Lifecycle Management.

We also have no permanent hazardous household waste disposal facility in the City and have successfully trialled contracting this service as an annual event. An operating programme for an annual hazardous household waste disposal has been included in this AMP.

The cost of environmental compliance is increasing, and our existing budget for renewing the Awapuni Closed Landfill is unlikely to be enough.

8. Impact of Demands and Drivers

8.1 Overview

This section outlines the demands and drivers that are directly relevant to the activity, how these are expected to have an impact on the services and our approach to understanding these. The SAMP includes discussion around the demands and drivers at a general level.

"There is a wide range of factors that are likely to affect future demand for waste minimisation and management. The extent to which these influence demand could vary over time and in different localities. This means that predicting future demand has inherent uncertainties. Key factors are likely to include the following:

- Overall population growth
- Economic activity
- Changes in lifestyle and consumption
- Changes in waste management approaches and legislation.

In general, the factors that have the greatest influence on the potential demand for waste and resource recovery services are population and household growth, construction and demolition activity, economic growth, and changes in the collection service or recovery of materials."[6]

In addition to these drivers, our Strategic Direction is driving change including new services.

8.2 Strategic Drivers

The Resource Recovery Plan proposes a new level of service to "maximise the proportion of waste diverted from landfill". This is in response to the WMMP, in which we have set a target to increase the proportion of waste diverted from landfill from 38% to 48% by 2025.

Data from a detailed waste assessment covering all aspects of waste management in Palmerston North was used to model waste diversion scenarios. Actions were identified that would most likely help us to achieve our 2025 waste diversion target, of which, three priority issues require new services and infrastructure:

- A significant proportion of waste going to landfill is organic waste, with food waste present across all kerbside rubbish collection systems.
- Lack of facilities to recycle or otherwise divert construction and demolition waste, in particular with a predicted increase in construction activity.
- More recyclables could be diverted from commercial properties.

8.3 Population Growth, Demographics and Households

Population projections for Palmerston North can be found in Section 4.3 of the SAMP.

Household growth, rather than population growth or demographics, is the best indicator of demand for our collection services. New households that are constructed within the rubbish and recycling collection areas are assigned wheelie bins and crates from stock.

The biggest impact this has on the activity is the operational costs of longer collection routes. Growth is not uniform across collection routes and from time to time these need to be optimised and requires careful planning for customers whose collection day changes.

[6] Waste Assessment

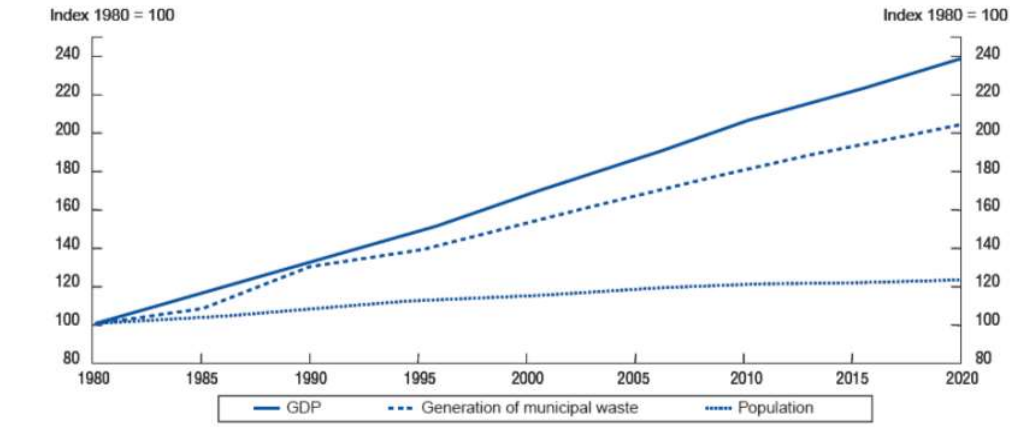
Subdivisions on the periphery of the city are further away from existing recycling drop off points and at some point, the travel distance will become a barrier to customers due to inconvenience. This needs to be investigated for suburbs of the city that have experienced growth such as Kelvin Grove and its surroundings.

8.4 Economic Activity

Key sectors predicted to contribute much of Palmerston North's growth over the next 30 years are health care and social assistance, construction, logistics, and public administration and safety. Other factors that could result in additional growth in the city over the next 20 years include:

- Major capital investment projects. The National Infrastructure Pipeline has identified an estimated $2.5 billion of investment in the Manawatu region likely over the next 10 years. This does not include private investment.
- Immigration to Australia has declined markedly during the period 2015 – 2018. If this trend continues, Palmerston North's population growth could exceed forecasts.
- Housing prices nationally, and particularly in Auckland, appear to be encouraging movement from the main urban centres to provincial cities like Palmerston North.

For reference, Figure 42 below shows the growth in municipal waste in the OECD plotted against GDP and population.



Source: OECD 2001.

Figure 42: Municipal Waste Generation, GDP and Population in OECD 1980 - 2020

Research from the UK and USA suggests that underlying the longer-term pattern of household waste growth is an increase in the number of materials consumed by the average household and that this in turn is driven by rising levels of household expenditure.

The relationship between population, GDP, and waste seems intuitively sound, as an increased number of people will generate increased quantities of waste and greater economic activity is linked to the production and consumption of goods which, in turn, generates waste.

Total GDP is also a useful measure as it takes account of the effects of population growth as well as changes in economic activity. The chart suggests that municipal solid waste growth tracks above population growth but below GDP. The exact relationship between GDP, population, and waste growth will vary according to local economic, demographic, and social factors.

As Palmerston North's population is anticipated to experience steady growth, with this growth decreasing over time, Palmerston North will likely experience an approximately similar increase in waste generated assuming no change to waste behaviour or resource recovery rates.

8.5 Changes in Lifestyle and Consumption

Community expectations relating to recycling and waste minimisation are anticipated to lead to increased demand for recycling and waste minimisation services.

Consumption habits will affect the waste and recyclables generation rates. For example, there has been a national trend related to the decline in newsprint. In New Zealand, the production of newsprint has been in decline since 2005, when it hit a peak of 377,000 tonnes, falling to 276,000 tonnes in 2011. A further indication of the decline in paper consumption comes from the Ministry for Primary Industry statistics shown in Figure 43.

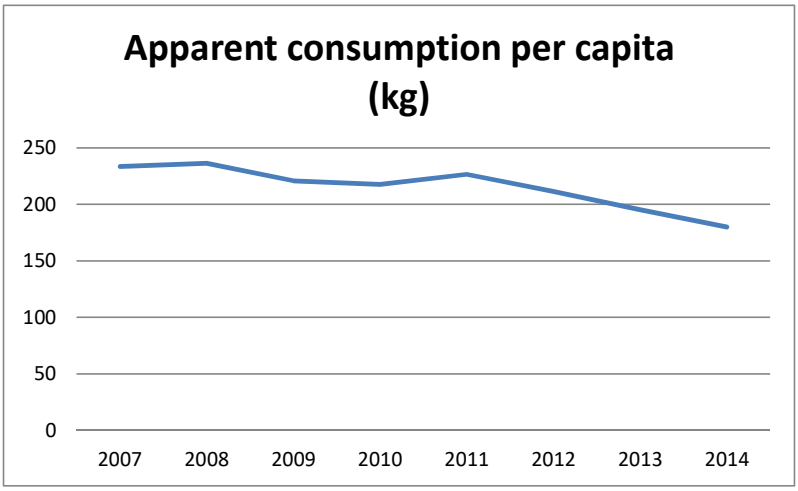


Figure 43: Apparent Paper Consumption per Capita

Anecdotally, this has been accompanied by an increase in the use of printed direct mail ('junk mail') both in real terms and proportionally. This presents challenges for fibre recycling as this is a less desirable recycling commodity. The ongoing growth in electronic devices will ensure that e-waste continues to be a growing waste stream, with (for example) data showing that households now tend to access the internet through multiple devices within the home and out, rather than a single home computer.

8.6 Central Government Policy

New Zealand had one of the highest per-capita rates of landfill disposal in the OECD in 2016. The linear use of resources is seeing landfills fill up and increase environmental harm. In response to this nationally significant issue Manatū mō te Taiao | Ministry for the Environment has an ongoing and evolving work programme under the New Zealand Waste Strategy 2010. Table 24 below summarises the various Central Government initiatives and their status as of August 2020. We likely need to revise the WMMP earlier than 2025 to respond to a new direction from Central Government.

Table 24: Central Government Work Programme for Waste

Title	Description	Status	Impact on Our Services
Investment in Recycling Infrastructure	The Government is investing $124 million in several recycling infrastructure initiatives across the country. This is part of the Covid-19 Response and Recovery Fund infrastructure focus announced July 2020.	Awarded?	We are not a recipient of awarded funding

Title	Description	Status	Impact on Our Services
Product Stewardship	As part of the wider plan to reduce the amount of rubbish ending up in landfills or polluting the environment, the Government has declared six priority products for regulated product stewardship under the Waste Minimisation Act (WMA). They are: plastic packaging tyres electrical and electronic products (e-waste) agrichemicals and their containers refrigerants farm plastics	Submissions received. Co-design underway for tyres and refrigerants	Reduction in illegal dumping of tyres.
Increase Waste Disposal Levy	The Government has confirmed its plans to increase and expand the national waste disposal levy to divert more material from landfill. It will use the revenue gathered from the waste disposal levy for resource recovery and waste minimisation. The plan includes progressively increasing over four years the levy rate from $10 per tonne to $60 per tonne.	Submissions received. Plan confirmed	The cost of rubbish bags will increase under the current user-pays model. The operational budgets for the waste management activity will also be affected by the Waste Levy increase.
Proposed National Environmental Standard for the Outdoor Storage of Tyres	About four million used car tyres and one million used truck and other vehicle tyres are generated annually in New Zealand. The majority of these are disposed of in landfills, stored on land or unaccounted for. Tyres stored outdoors pose risks to the environment, human health, and local communities.	Submissions received. The final draft is being prepared for Cabinet	We will need to consider the impact of this on our current stockpile of tyres located at Awapuni.
National Plastics Action Plan	To lead the development of guidelines to inform the sustainable use of plastic in Government procurement. Improve data on plastics. Support action on plastics through education. Leverage international connections to support our plastics agenda.	Planning	To be determined

Title	Description	Status	Impact on Our Services
Beverage Container Return Scheme	Government has funded the design of a CRS for New Zealand and is now considering the next steps. A CRS would not be implemented until 2023 at the earliest.	Planning implementation	As a result of the CRS, high-value plastics and glass could be removed from kerbside collections. Therefore, it is in our interest to investigate how we can be involved in running a CRS locally
Standardisation of Kerbside Collections	A national review is currently underway into how collections differ around the country.	Investigation underway	The most likely change to impact our services would be the standardisation of products that can be collected in the mixed recycling service. We already collect glass separately which is the other major change expected.

8.7 Recycling and Recovered Materials Markets

Recovery of materials from the waste stream for recycling and reuse is heavily dependent on the recovered materials having an economic value. This particularly holds for the recovery of materials by the private sector. Markets for recycled commodities are influenced by prevailing economic conditions, by commodity prices for the equivalent virgin materials, and by market controls in key destinations such as China. The risk is linked to the wider global economy through international markets, and the recent impact of the China National Sword policies has demonstrated this. [7]

8.8 Technology

Council seeks to continue the processing of recyclables through the MRF from collections and RDOPs. The current age and condition of equipment associated with the MRF may require asset replacement or upgrade. An initial condition asset of the MRF assets is required to confirm the current condition. Upgrades may be required to enable the continued operation and facilitate potential capacity upgrades. Consideration of the current rapidly changing technology market and the undefined scope of the container return scheme will require consideration by Council. Capital investment for upgrades or replacement of the MRF may be required in the next ten years.

8.9 Data Trends

The 2019 WMMP identified a new action for the implementation of the provisions of the Waste Management and Minimisation Bylaw. With reference to licensing and data collection for those companies who deliver waste services and zero waste events in Palmerston North. Enabling Council to set standards and gather data, providing them with information for informed decision making. Current waste assessments are carried out every three years, but the data gathered from private waste service providers will enable trending on an annual basis and better forecasting of waste diversion against future targets.

RFID tags have been installed on all recycling bins to track their location and usage. The data captured by the system is yet to be analysed as it is currently inaccessible. The analysis is likely to improve the

[7] Waste Assessment

efficiency of the operation and help reduce contamination by informing us of hot spots that can be targeted in campaigns.

8.10 Climate Change

Cities consume more than two-thirds of the world's energy and account for more than 70 per cent of global CO_2 emissions. The building sector is a significant contributor due to the amount of energy required to produce materials such as concrete and the waste produced during both construction and demolition. Sustainable building materials have entered the market but a positive impact on waste generation will not be fully realised until there is a local facility to divert waste from the construction industry.

The Government declared a climate change emergency in December 2020 and announced its goal for the public sector to be carbon neutral by 2025. While out of scope of this AMP, it is important to note that this is likely to influence our decisions around our collections fleet (we have two electric collection trucks) and offsetting our emissions.

9. Lifecycle Management

9.1 Lifecycle Overview

The Resource Recovery Activity is planned for, managed, and operated in six distinct lifecycle groups, these being:

- Collection assets;
- Recycling Drop off Points (RDOP) and Transfer Stations;
- Public space bins;
- Materials Recovery Facility (MRF) including glass processing;
- Compost operations; and
- Closed landfills and transfer stations including weighbridge.

Table 25 contains a summary of the assets in each lifecycle group.

Table 25: Summary of Assets within each Lifecycle Group

Lifecycle Group	Sub-Activity	Asset List
Collection Assets	Waste Minimisation *(Waste Management fleet assets are out of scope of this AMP)*	Recycling wheelie bins Glass recycling crates Food waste wheelie bins
Recycling Drop Off Points and Transfer Stations	Waste Management Waste Minimisation	Ferguson Street RDOP Ashhurst RDOP Awapuni RDOP
Public Space Bins	Waste Management Waste Minimisation	General rubbish bins Comingled recycling bins Glass recycling bins
Materials Recovery Facility	Waste Minimisation	Material Recovery Facility Glass sorting facility
Compost Operations	Waste Minimisation	Compost plant and equipment Hard stand areas Awapuni Green Waste Dropoff
Closed Landfills	Waste Management	Ashhurst Transfer Station (includes green waste drop off) Landfill gas collection Security fencing Drainage Weighbridge

The sub-sections are built up based on the following:

- What are the strategic drivers and levels of service expected from this asset?
- What are our customer and strategic issues for this asset?
- What operating, maintenance, renewal, and asset improvement investment do we need to respond to these things are deliver on the outcomes sought?

In addition, an overall Lifecycle management alternatives section examines what investment alternatives are available.

Service overview

The Service Overview sub-section describes the asset group being considered.

Customer and Strategic Issues

This section provides a link between levels of service, strategic direction, activity challenges, and risks through to specific assets. It seeks to translate this direction into short term goals, long term goals, and life cycle impacts sought from investment.

Operations and Maintenance

How we operate and maintain our assets day to day is important in the performance of the resource recovery activity. Operational activities ensure the successful continuation of the service, while maintenance activities serve to extend the life of the asset, delaying the need for asset renewal.

Renewals Plan

The aim of the renewal plan for each asset type is to identify the optimum level of renewal investment to minimise whole of life costs while delivering the appropriate level of service to the customers.

Asset Improvement and New Assets

To deliver the outcomes sought for the resource recovery activity, asset improvement and capital new investment may also be required. Asset improvement will typically be required where there is a gap between a level of service and what is currently being delivered.

Asset Disposal

When an asset is no longer required, its appropriate decommissioning and disposal needs to be considered. Ideally, this would have been considered in the planning for the asset.

9.2 Investment Management

This section includes initiatives that do not involve physical works but involve investigation and planning to manage investment in the Activity.

There are currently five operational programmes in place to contribute to the investment management of the Resource Recovery Activity. The allocated budget for each of these over the next ten years is detailed in Table 26.

There is a programme (974) dedicated to increasing educational efforts in the Resource Recovery Activity. It includes resources to develop educational materials such as; written articles, information brochures, video, and multi-media presentations. Another option is to include an application for residents to use to find key information. This programme will also support and communicate changes to the activity.

Programme 1724 funds a series of specific studies to investigate the diversion of target materials from landfill. The investigations will target specific materials and actions in the WMMP 2019 (Food Waste E06 and C03), Mattress Recycling (C08), Construction and Demolition Waste (IN3). Further target materials as they are identified have been allowed for.

The undertaking of a bi-annual Hazardous Waste Day Collection is supported by programme 1811. This programme is supported by action C06 in the WMMP 2019 and is reinforced by three events that have been trialled over the last three years. These events have been successful in removing Hazardous Waste from the environment.

Programme 1908 is dedicated to improving our Resource Recovery Activity asset information with a focus on the component level and condition assessments. This information is required to inform the renewals and maintenance programmes and strategies.

A programme was created (1909) to make a portion of the Waste Minimisation Funds received available as a contestable fund. This programme is to allow for the introduction of a contestable fund as per action E04 in the WMMP 2019.

Table 26: Operational Programmes for the Recycling and Recycling Activity

Prog. Type	Prog. No. & Name	Proposed 10 Year Plan Budget				
Operational	974 City-wide - Rubbish & Recycling - Communication, Education and Resource Materials	2021/22	2022/23	2023/24	2024/25	2025/26
		$30,000	$30,000	$30,000	$30,000	$30,000
		2026/27	2027/28	2028/29	2029/30	2030/31
		$30,000	$30,000	$30,000	$30,000	$30,000
Operational	1724 - City-wide - Diversion of Waste from Landfill - Investigation Studies	2021/22	2022/23	2023/24	2024/25	2025/26
		$125,000	$200,000	$75,000	$75,000	$75,000
		2026/27	2027/28	2028/29	2029/30	2030/31
		$75,000	$75,000	$75,000	$75,000	$75,000
Operational	1811 - City-Wide - Bi-Annual Hazardous Waste Day	2021/22	2022/23	2023/24	2024/25	2025/26
		$0	$0	$50,000	$0	$0
		2026/27	2027/28	2028/29	2029/30	2030/31
		$50,000	$0	$50,000	$0	$50,000
Operational	1908 - City-Wide - Rubbish & Recycling - Asset Condition Assessments	2021/22	2022/23	2023/24	2024/25	2025/26
		$50,000	$50,000	$50,000	$30,000	$30,000
		2026/27	2027/28	2028/29	2029/30	2030/31
		$30,000	$30,000	$30,000	$30,000	$30,000
Operational	1909 - Waste Minimisation Levy - Contestable Fund	2021/22	2022/23	2023/24	2024/25	2025/26
		$40,000	$40,000	$40,000	$40,000	$40,000
		2026/27	2027/28	2028/29	2029/30	2030/31
		$40,000	$40,000	$40,000	$40,000	$40,000

9.3 Collection Assets

9.3.1 Lifecycle Management

The collection assets, namely crates and bins, are used for customers to store recyclables and food waste before collection. As mentioned, our fleet and rubbish bags are outside the scope of this AMP.

Table 27 summarises the links between levels of service and the lifecycle management of the collection assets, including associated risks. These are discussed in more depth in the following sections.

Table 27: Lifecycle Management of the Collection Assets

Levels of Service Statements	Technical Performance Indicators	Short Term Goal	Long Term Goal	Risks	Life Cycle Impacts
We provide collection services to manage waste in an environmentally responsible manner and maximise the amount of waste diverted from landfill.	• Resolve requests for new bins and/or crates within two weeks. • Hold stock for at least two months' supply of bins and crates.	• Provide and/or replace crates and bins as requested.	• Develop new services (such as kerbside food waste collection) to increase diversion.	• Customer satisfaction deteriorates. • Waste diversion target is not met. • Lack of stock.	• Sufficient stock is available to supply new or reactive replacement bins and/or crates. • Plan for residential kerbside food waste pilot.
We manage our services in a financially sustainable way.	• Contamination is less than 12%. • No quality penalties for colour sorted glass sales. • Commercial customer churn <5%.	• Optimise collection days to maximise route efficiency. • Educate and campaign for correct behaviour.	• Minimise uncertainty in budgets by piloting new services.	• Disposal costs exceed budgets. • Collected materials too contaminated to process. • Loss of revenue from commercial customers.	• Operational cost is minimised. • Revenue is maximised. • Budgets for new services are at the appropriate level of certainty.

9.3.2 Operations and Maintenance

Scope

The following activities are included within the operation and maintenance of the collection assets:

- Provide a fortnightly kerbside collection of recycling wheelie bins and glass crates (alternative weeks to wheelie bins) to the residential and commercial areas, and weekly collection in the Palmerston North CBD that are rated for the service, as per the collection maps.
- Colour sort glass at the kerbside to purchasers' requirements to ensure 100% glass recovery and realisation of the maximum available sale revenue.
- Deliver comingled materials and glass to the Materials Recovery Facility for processing
- Data management to record the number of wheelie bins collected and tonnage of recycling collected on each collection route.
- Administering the Waste Management and Minimisation Bylaw
- Public education of what can be recycled.
- Record contaminated bins.
- Audit the kerbside recycling collection.
- Carry out Council's fortnightly wheelie bin recycling collection service as efficiently and effectively as possible.

- Minimise non-compliance issues associated with the wheelie bin recycling collection service.
- Ensure the collection is undertaken in such a way as to meet OSH requirements and to minimise injuries to the collectors.
- Response to and resolution of Request for Service (RFS) within agreed timeframes.

Operational and maintenance practices for collections are mainly documented in the Kerbside Comingled Recycling Collection Services and Kerbside Glass Recycling Collection Services Service Level Agreements (SLA). These agreements were developed to provide the required levels of service under the previous internal service delivery model. Even though it is no longer required due to a change in the service delivery model, these agreements are still the best record of the scope of operational and maintenance tasks.

Procedures

The collections Standard Operating Procedures (SOP) provide additional detail to the SLAs on the operational and maintenance tasks. These currently cover mostly health and safety issues, and administrative tasks.

Operational Plans need to be developed that set operational objectives that give effect to the Asset Management Objectives to provide the agreed Levels of Service to our customers.

Risks

The risk of customer satisfaction deteriorating is low and managing requests reactively is considered appropriate as long as there is sufficient stock. Two months is considered sufficient lead-in time for orders to be filled for wheelie bins and crates.

Contamination is a significant issue and requires an operational response from time to time to either educate and campaign for customers to use the service correctly or carry out inspections of wheelie bins before collection.

A Business Development Officer role has been created to grow our commercial customers.

9.3.3 Renewal Plan

Replacement of crates and wheelie bins occurs reactively when they break or have been lost/stolen or intentionally damaged (e.g. burnt out). We use an assumed negative skewed asset survivor curve to forecast the renewal budget. This curve is updated every three years based on actual replacement rates.

Renewal programmes for the collection assets are shown in Table 28 below.

Table 28. Proposed Programmes for Replacement of Collection Assets

Prog. Type	Prog. No. & Name	Proposed 10 Year Plan Budget				
Renewal	612-Recycling - City-wide Wheelie Bin and Crate Renewals	2021/22	2022/23	2023/24	2024/25	2025/26
		$78,000	$115,500	$153,000	$199,200	$239,500
		2026/27	2027/28	2028/29	2029/30	2030/31
		$274,100	$318,700	$421,500	$533,500	$716,500

9.3.4 Asset Improvement and New Assets

For existing services, new bins and crates are provided to all rated properties within the serviced collection area. The project household growth rate is used to forecast budgets and it is assumed that no rural residential customers will opt-in.

As mentioned, an opportunity exists to increase the diversion of food waste from landfill. It is proposed to pilot a kerbside residential food waste collection service to determine the feasibility and requirements of

a city-wide service. It is assumed that a new service is not rolled out, but this could be proposed in the next planning cycle.

Table 29 contains the proposed budgets for new collection assets.

Table 29: Proposed Programmes for New Collection Assets

Prog. Type	Prog. No. & Name	Proposed 10 Year Plan Budget				
Capital New	657 - Urban Growth - Recycling - City-wide Wheelie Bins and Crates	2021/22	2022/23	2023/24	2024/25	2025/26
		$67,615	$67,615	$67,615	$67,615	$67,615
		2026/27	2027/28	2028/29	2029/30	2030/31
		$69,215	$69,215	$69,215	$69,215	$69,215
Capital New	1410 – City-wide Recycling Services to commercial /organisational Properties Development	2021/22	2022/23	2023/24	2024/25	2025/26
		$40,000	$40,000	$40,000	$30,000	$30,000
		2026/27	2027/28	2028/29	2029/30	2030/31
		$30,000	$30,000	$30,000	$30,000	$25,000
Operational	2044 - City-Wide - Kerbside Food Waste - Investigations and Trial	2021/22	2022/23	2023/24	2024/25	2025/26
		$0	$190,000	$70,000	$0	$0
		2026/27	2027/28	2028/29	2029/30	2030/31
		$0	$0	$0	$0	$0

9.3.5 Asset Disposal

As our kerbside bins and crates are made of HDPE and are supplied to a plastic processor for recycling.

9.4 Recycling Drop Off Points

9.4.1 Lifecycle Management

Recycling Drop Off Points (RDOPs) are available for residents and businesses to use in addition to the collection services. There are three RDOPs located at Awapuni, Ferguson Street and Ashhurst.

Table 30 summarises the links between service levels and the lifecycle management of the RDOP assets.

Table 30: Lifecycle Management of the Recycling Drop Off Points

Levels of Service Statements	Indicator	Short term goal	Long term goal	Risks	Life Cycle impacts
We provide collection services to manage waste in an environmentally responsible manner and maximise the amount of waste diverted from landfill.	• Increase in amount diverted year on year.	• Maintain current service level. • Record asset condition.	• Prioritise replacement by condition and risk. • Plan for new RDOP to meet growth.	• Usage declines due to the state of customer-facing assets. • Customer satisfaction declines in new suburbs due to the inconvenience of RDOP locations.	• Optimised maintenance and renewals. • Plan for new RDOP in conjunction with other property development.
We manage our services in a financially sustainable way.	• Fees set annually. • No illegal dumping at RDOPs.	• Set fees at an appropriate and fair level. • Discourage illegal dumping.	• Minimise uncertainty in budgets by designing new RDOP ahead of the delivery year.	• Low fees result in overuse of service. • High fees result in illegal dumping.	• Operational cost is minimised. • Revenue is maximised. • Budgets for new services are at the appropriate level of certainty.

9.4.2 Operations and Maintenance

Scope

The following activities are included within the operation and maintenance of the RDOP assets:

- Operation:
  - Collection of fees (as appropriate).
  - All recyclable materials collected are stored on-site before transportation.
  - Materials collections are practiced in a manner to obtain maximum recovery rates.
  - Rubbish is transported to the transfer station at Matthews Avenue.
- Proactive maintenance:
  - All signage is maintained to be correct and visible.
  - Fences are kept in a good state of repair.
  - Sites are kept free of vermin and pests.
- Reactive maintenance:
  - Litter is removed from the perimeter fences and within the site.

Operational and maintenance practices for the RDOP's are found in the corresponding Ferguson Street RDOP, Awapuni RDOP and the Ashhurst Bunnythorpe Transfer Station Service Level Agreements (SLA). These agreements were developed to provide the required levels of service under the previous internal

service delivery model. Even though it is no longer required due to a change in service delivery model, these agreements are still the best record of the scope of operational and maintenance tasks.

Procedures

The collections Standard Operating Procedures (SOP) provide additional detail to the SLAs on the operational and maintenance tasks. These currently cover mostly health and safety issues, and administrative tasks.

Operational Plans need to be developed that set operational objectives that give effect to the Asset Management Objectives to provide the agreed Levels of Service to our customers.

Operational programmes are shown in Table 31 below. Apart from a small waste oil receptacle at Ferguson Street, none of our sites are suitable for storing hazardous household chemicals. The handling of these wastes is high risk and is best suited to contracting this service. This is proposed as an annual event.

Table 31: RDOP Renewal Programmes

Prog. Type	Prog. No. & Name	Proposed 10 Year Plan Budget				
Operational	1811-City-Wide - Annual Hazardous Waste Day	2021/22	2022/23	2023/24	2024/25	2025/26
		$50,000	$50,000	$50,000	$50,000	$50,000
		2026/27	2027/28	2028/29	2029/30	2030/31
		$50,000	$50,000	$50,000	$50,000	$50,000

9.4.3 Renewal Plan

Budgets for the renewal of RDOP assets is based on expected life. The decision making around the renewal of RDOP assets is based on staff judgement and experience. RDOP asset renewal programme budgets are shown in Table 32 below.

Table 32: Proposed RDOP Renewal Programmes

Prog. Type	Prog. No. & Name	Proposed 10 Year Plan Budget				
Renewal	1374 - City-wide - Recycling Drop Off Facilities - Renewals	2021/22	2022/23	2023/24	2024/25	2025/26
		$9,000	$9,000	$10,500	$9,000	$20,000
		2026/27	2027/28	2028/29	2029/30	2030/31
		$10,500	$9,000	$9,000	$15,000	$9,000

9.4.4 Asset Improvement and New Assets

The Ferguson Street RDOP has had a recent major upgrade in the last five years. It is now a covered recycling facility, where users can deposit household recycling products.Due to the recent modifications, this facility is operating at its best, in comparison to the other RDOPs. Issues arising from the Ferguson Street RDOP relate to contamination and fly-tipping by some users. While these issues have been minimised by security enhancements, they cannot be eliminated.

The Awapuni RDOP has been recently upgraded and included security CCTV to minimise illegal dumping.

The Ashhurst RDOP is a rented mobile facility and there are no plans to construct our fixed assets.

There is no plan to construct our own specialised hazardous waste facility.

The capital new programme budgets associated with the RDOPs is shown in Table 33 below. Some minor upgrades are proposed and a new RDOP is planned for 2024/25~26.

Table 33: Proposed RDOP Capital New Programmes

Prog. Type	Prog. No. & Name	Proposed 10 Year Plan Budget				
Captital New	1373 - City-wide - Recycling Drop Off Facilities - Development	2021/22	2022/23	2023/24	2024/25	2025/26
		$35,000	$35,000	$0	$1,000,000	$1,000,000
		2026/27	2027/28	2028/29	2029/30	2030/31
		$0	$0	$0	$0	$0

9.4.5 Asset Disposal

Assets are disposed of as demolition waste during facility upgrades. When assets such as steel cages are replaced, they are often repurposed or disposed of through a metal recycler.

9.5 Public Space Bins

9.5.1 Lifecycle Management

Rubbish and recycling bins are located strategically in our parks, roads and other public areas. We typically maintain these assets on an as-required basis. This includes bin emptying and bin replacement when necessary.

Public space bins provide the community with disposal services of varying types, these being; general refuse, co-mingled recycling and glass recycling. The availability of these services depends on the demand at the location. All bins are made available where there is a high demand to encourage recycling but where demand is lower, no glass recycling is provided or sometimes only a rubbish bin.

Table 34 summarises the links between service levels and the management of the lifecycle of the public bin assets.

Table 34: Lifecycle Management of the Public Space Bins

Life Cycle Intent Statement	Indicator	Short Term Goal	Long Term Goal	Risks	Life Cycle Impacts
We provide collection services to manage waste in an environmentally responsible manner and maximise the amount of waste diverted from landfill.	Increase in amount diverted year on year.	Continue with scheduled bin emptying.	Investigate technology to prompt emptying.	Overflowing bins prevented by continual tweaking of bin emptying frequency.	Increased operational costs to maintain service level.
		Standardise bins (rolling renewal).	Minimise early replacement.	Standardisation ensures users can find and use bins correctly.	Increased asset write-off to provide consistent customer experience.

Life Cycle Intent Statement	Indicator	Short Term Goal	Long Term Goal	Risks	Life Cycle Impacts
We manage our services in a financially sustainable way.	Bin utilisation is maximised and bins are emptied before full.	Complete service rationalisation.	Utilise technology to prompt emptying.	Without rationalisation of locations can lead to an inefficient and costly service.	Optimised operational costs.

9.5.2 Operations and Maintenance

Operational tasks include rubbish and recycling collection, and any physical maintenance required to keep the public space bins in service. We empty the bins on a reoccurring schedule, ranging from daily to fortnightly clearances. The schedules are determined by the popularity and regular usage of the areas the bins inhabit. On occasion, customers report overflowing bins and these are responded to and emptied reactively. Physical maintenance could include fixing, repositioning, or re-stickering damaged bins.

9.5.3 Renewal Plan

Budgets for the renewal of public bin assets is based on an assumed level of replacement due to damage and is reduced due to the need to intervene and standardise the bin designs. Public space bin renewal programme budgets are shown in Table 35 below.

Table 35. Proposed Public Space Bin Renewal Programmes.

Prog. Type	Prog. No. & Name	Proposed 10 Year Plan Budget				
Renewal	1368-City-wide - Public Space Rubbish & Recycling Bins Renewals	2021/22	2022/23	2023/24	2024/25	2025/26
		$45,000	$45,000	$45,000	$45,000	$45,000
		2026/27	2027/28	2028/29	2029/30	2030/31
		$45,000	$45,000	$45,000	$45,000	$45,000

9.5.4 Asset Improvement and New Assets

Capital new programmes have been developed with a focus on rationalising and standardising the number and design of bins in public spaces and the road. The new bin design is clearer to differentiate the bin types to reduce contamination from misplacement. The national standard recycling and waste colours have been adopted for bins. The capital new programme budgets associated with public space bins is shown in Table 36 below.

Table 36: Proposed Public Space Bin Capital New Programmes

Prog. Type	Prog. No. & Name	Proposed 10 Year Plan Budget				
Capital New	506 - City-wide - Public Space Rubbish & Recycling Bins Development	2021/22	2022/23	2023/24	2024/25	2025/26
		$63,500	$63,500	$63,500	$63,500	$50,000
		2026/27	2027/28	2028/29	2029/30	2030/31
		$50,000	$50,000	$50,000	$50,000	$50,000

9.5.5 Asset Disposal

Assets are typically disposed of as waste through a metal recycler. Disposing of assets occurs when bins are damaged and unable to be repaired. Our public bin asset information is stored in Road Assessment and Maintenance Management (RAMM) software. As assets come to the end of their life and are replaced, RAMM will be updated by our Officer's to reflect this information. The old asset will be presented as 'out of service' and the new asset will be added, with its accompanying information.

9.6 Materials Recovery Facility (MRF) and Glass Sorting Facility

9.6.1 Lifecycle Management

The purpose of the MRF is to increase diversion and revenue by sorting recyclables into products that can be sold to commodity traders. It provides a facility for large amounts of commercial recycling to be dropped off, either ad-hoc or under contract.

A glass recycling facility is also maintained and operated occasionally. Historically this was used to colour sort glass but now most of the glass collected is either sorted at the kerb by us or by our customers.

Table 37 summarises the links between service levels and the management of the lifecycle of the MRF and glass recycling assets.

Table 37: Lifecycle Management of the MRF and Glass Recycling Facility Assets

Life Cycle Intent Statement	Indicator	Short Term Goal	Long Term Goal	Risks	Life Cycle Impacts
We provide collection services to manage waste in an environmentally responsible manner and maximise the amount of waste diverted from landfill.	Seven day average of recyclables received is less than 21 tonnes per day. Productivity is at least 0.4 tonnes per person hour.	Record asset condition and maintain plant to minimise shutdowns. Formalise maintenance contract and recording of work done.	Investigate optical sorting of plastics as an alternative to manual sorting.	Failure of critical assets could result in sending unprocessed materials to the landfill for sanitary reasons if store for more than three days. Urban growth and regional demand place pressure on the MRF Capacity	Optimal balance between the condition of assets and maintenance costs. Plan for new sorting technologies, or alternatively collection methodology changes.
We manage our services in a financially sustainable way.	Contamination is less than 12%.	Manage accepted products to those that can be recycled.	Identify new product markets.	Increased waste disposal costs. Loss of revenue including paying to get rid of products.	Plan for new sorting technologies. Net operating cost minimised.

9.6.2 Operations and Maintenance

Scope

The following activities are included within the operation and maintenance of the MRF and glass recycling assets:

- Operational
  - Standard operating procedures (SOPs)
  - Auditing of incoming loads
  - Cleaning
  - Removal of products stuck in the mechanical equipment
  - Proactive maintenance
  - Servicing mechanical equipment
- Reactive maintenance
  - Equipment failure

Operational and maintenance practices for the MRF are specified in the Awapuni Materials Recovery Facility – Comingled Processing and Awapuni Material Recovery Facility – Glass Processing Service Level Agreements (SLA). These agreements were developed to provide the required levels of service under the previous internal service delivery model. Even though it is no longer required due to a change in the service delivery model, these agreements are still the best record of the scope of operational and maintenance tasks.

Procedures

The collections Standard Operating Procedures (SOP) provide additional detail to the SLAs on the operational and maintenance tasks. These currently cover mostly health and safety issues, and administrative tasks.

Operational Plans need to be developed that set operational objectives that give effect to the Asset Management Objectives to provide the agreed Levels of Service to our customers.

Audits are scheduled quarterly at the MRF. The purpose of these is to gain insight into the type of products that are being recycled and the amount of contamination that we are receiving. We can associate this data with their collection routes to then inform future decisions in that area. Audits are carried out on kerbside, RDOP, and commercial recycling collection trucks. Auditing public space bin collections at the MRF could help improve the decision making in that activity.

When operation of the glass sorting facility is carried out, staff from the MRF are transferred to the glass sorting location for operation, usually during MRF downtime.

Currently, the only cleaning operations carried out in the processing plant is floor sweeping and removal of products stuck in the paper screen. Sweeping is done every Monday and removals are carried out as required. A more in-depth cleaning routine would help to extend the life of the mechanical assets and should be noted as an improvement opportunity.

Due to resourcing constraints, a largely reactive approach is taken with regards to maintenance. Some minor proactive maintenance is undertaken such as weekly greasing of just the easily accessible chains on the conveyors.

Visual inspections are carried out when a breakdown occurs. This process then guides the MRF operations and dictate when an engineer is required to attend the site. Due to the nature of the MRF assets, little maintenance can be undertaken in house.

Routine maintenance could be undertaken in-house by staff, subject to the availability of resources. However, external engineers would still be required to undertake mechanical inspections, beyond the

scope of routine maintenance. Electrical works will continue to be outsourced, as staff do not have the capability in-house to provide the expertise required.

A scheduled maintenance plan is required to cover planned and other maintenance requirements. Documentation has been developed which could help with the maintenance plan creation. Savings to improve the existing approach to maintenance would help extend the life of the assets, enabling planned as opposed to reactive shutdowns currently required. Strategically due to the nature and operations onsite, this would support the success of the site.

Table 38 contains the proposed operational budget for processing a stockpile of mixed glass at the Awapuni Landfill.

Table 38: Proposed Operational Programmes for the Glass Sorting Facility

Prog. Type	Prog. No. & Name	Proposed 10 Year Plan Budgets				
Operational	1425 - Awapuni Closed Landfill - Waste Mixed Colour Glass Stockpile Processing	2021/22	2022/23	2023/24	2024/25	2025/26
		$0	$46,500	$46,500	$46,500	$46,500
		2026/27	2027/28	2028/29	2029/30	2030/31
		$46,500	$46,500	$46,500	$46,500	$46,500

9.6.3 Renewal Plan

Budgets for the renewal of MRF and Glass processing assets are based on expected life. The decision making around the renewal of assets is based on staff judgement and experience. Asset renewal programme budgets are shown in Table 39 below.

Table 39: MRF and Glass Recycling Asset Renewal Programmes

Prog. Type	Prog. No. & Name	Proposed 10 Year Plan Budget				
Renewal	649 - Recycling - Materials Recovery Facility Renewals	2021/22	2022/23	2023/24	2024/25	2025/26
		$130,000	$135,000	$85,000	$118,000	$85,000
		2026/27	2027/28	2028/29	2029/30	2030/31
		$135,000	$98,000	$98,000	$145,000	$188,000

9.6.4 Asset Improvement and New Assets

The asset improvements identified at the MRF and the Glass Sorting Facility are listed in Table 40 below.

Table 40: Investigations into MRF and Glass Recycling Facility Asset Improvements

Description of Investigation	Benefits
Investigate an optical sorter in the line.	• Installing an optical sorter on the container sort line would help accurately identify the different plastics processed, alleviating the error caused by the naked human eye when separating plastics. • Hard to differentiate grade 1's, 2'sand 5's that can be rescued from the 'mixed grade' selection and sold to generate revenue.

Description of Investigation	Benefits
Investigate upgrading the paper screen in the line.	• This could result in fewer products getting stuck in the screen. • Downtime is minimised and productivity increases. • Improve the separation of paper products from the containers (plastics, steel and aluminium)
Investigate weather protection from the line.	• Processing can continue in wet/windy weather conditions. • Better guaranteed productivity. Asset lives are prolonged from less weather interference.

At the current stage, there is only an indicative capital investment defined for the MRF and the glass sorting facility. There is a proposed capital project to extend the staff facilities at the MRF as they were unsuitable to accommodate all the staff when the Waste Operations depot was moved from Ferguson Street to Awapuni. The programme is in place to enhance the facility to ensure it is safe, fit for purpose, and functional, to maximise efficiencies of the operational staff through the physical environment.

The capital new programme budgets associated with the MRF and Glass Sorting Facility is shown in Table 41.

Table 41: MRF and Glass Sorting Facility Capital New Programmes

Prog. Type	Prog. No. & Name	Proposed 10 Year Plan Budget				
Capital New	727 - Recycling - Materials Recovery Facility Development	2021/22	2022/23	2023/24	2024/25	2025/26
		$0	$0	$0	$0	$0
		2026/27	2027/28	2028/29	2029/30	2030/31
		$0	$6,000,000	$0	$0	$300,000
Captital New	1783 - Resource Recovery Buildings - Staff Welfare and Health and Safety Improvements	2021/22	2022/23	2023/24	2024/25	2025/26
		$300,000	$0	$0	$0	$0
		2026/27	2027/28	2028/29	2029/30	2030/31
		$0	$0	$0	$0	$0

9.6.5 Asset Disposal

There are three options to disposing of the MRF and Glass Sorting assets; resale, recycle, or send to landfill. Large mechanical equipment is attempted to be resold, but often the equipment is out of date and has no resale value. If this is the case, the equipment is scrapped for recyclable materials where possible. Any assets or asset parts that cannot be recycled are disposed of in a landfill.

When an item is out of service, this information is recorded in IPS. As we have identified some data gaps in IPS, an asset update is underway to accurately reflect the current state of the MRF and Glass Sorting Facility assets.

9.7 Compost Operations

9.7.1 Lifecycle Management

We can accept many inputs from our customers that we compost in either our commercial-grade compost process or biosolids process. This means we can provide a high-quality soil conditioning product that can be sold to our customers that is safe and meets our standards and resource consent conditions. Our biosolids composting operation benefits our Wastewater Activity as we can process wastewater treatment sludge and apply it safely to the landfill cap to protect it.

Table 42 summarises the links between service levels and the management of the lifecycle of the compost assets.

Table 42: Lifecycle Management of the Composting Operation Assets

Life Cycle Intent Statement	Indicator	Short Term Goal	Long Term Goal	Risks	Life Cycle Impacts
We provide collection services to manage waste in an environmentally responsible manner and maximise the amount of waste diverted from landfill.	• Increase in amount diverted year on year. • Composting consent conditions are met.	• Create commercial-grade compost and composted biosolids for closed landfill cover. • Comply with consent conditions.	• Determine the future of compost operations concerning the Nature Calls project and compost consent expiry.	• More food waste customers are needed as some food waste could be diverted to Tōtara Road Wastewater Treatment Plant Digester.	• Optimised maintenance and renewals.
We manage our services in a financially sustainable way.	• Increase in food waste customers year on year. • Increase in compost sales year on year.	• Develop food waste customers.	• See above.	• Loss of revenue due to inputs going to Wastewater Activity.	• Net operating cost minimised.

9.7.2 Operations and Maintenance

The following activities are included within the operation and maintenance of the composting assets:

- Operations:
  - Site housekeeping and windrow placement
  - Processing input material
  - Testing materials (inputs and products)
  - Creating compost (commercial grade and cover grade)
  - Preparing compost for sale

- Proactive maintenance:
  - Daily monitoring (data, windrow temperature, carbon dioxide, moisture, and oxygen)
  - Greenwaste shredder pre-startup and pre-shutdown checks and maintenance
  - The mower and digger are maintained according to their hour meters and service stickers
- Reactive maintenance:
  - Fire protocols
  - Equipment failure

Processes and SOPs

Operational and maintenance practices for the composting services are documented in Awapuni Composting SLA. This was a service provision agreement between the Waste Management Division and the previous iteration of the Council Infrastructure Unit developed to state the composting operations level of service. Even though it is no longer required due to Council structure change, it is the best record of the schedule of operation and maintenance tasks and frequencies. The SLA has historically renewed annually, with the last renewal and update in 2014.

Daily operations are listed within the SOPs. A record of these are located in the Solid Waste SOP Register. The SOPs are generally up to date, although some are still in development and require completion. More specifically, a 'Maintenance of Machinery', 'Gas Field Testing & Emergency Response', and 'Hire Equipment' SOPs are due to be developed, as highlighted in the Solid Waste SOP register. There is a hard copy of the SOPs onsite for the team to refer to for descriptors of the day to day tasks. An improvement item to streamline this process is for a scheduled rolling review on a two-yearly basis. This should be in place unless changes occur in the operations, requiring interim updates. For example, the acceptance of materials from DAF has stopped, due to the nature of this material and its contribution to fires onsite during the autumn period. A change to operations was made following this action by increasing the distance between windrows. This has also aided in the accessibility to material and between windrows.

Documentation of the composting operations can be improved by inputting the processes applicable in Promapp. As Promapp is reviewed periodically, it will ensure a planned and continuous revision of the current operational activities.

A board of the daily tasks is located in the staff room. As a lot of the composting operations are daily tasks, staff actioning these is essentially run like clockwork. Daily monitoring is high on the list of daily requirements and projects are delivered if required, as time persists.

9.7.3 Renewal Plan

Due to the number of composting assets leased out, the renewal process generally involves requesting replacement equipment from these businesses.

For assets owned by us, the renewal budget previously encompassed all assets held at the Awapuni site but has now been separated as shown in Table 43 below. The trommel screen is scheduled for renewal in 2025/26 and the Hotrot composters are predicted to require renewal in 2027/28 – hence the increased renewal budgets in these financial years. Budgets have been derived from the asset expected life and current condition of the asset.

Table 43: Proposed Renewal Programme Budgets for Compost Operations

Prog. Type	Prog. No. & Name	Proposed 10 Year Plan Budgets				
Renewal	1721 - Composting Activity Site Renewals	2021/22	2022/23	2023/24	2024/25	2025/26
		$8,000	$8,000	$8,000	$8,000	$258,000
		2026/27	2027/28	2028/29	2029/30	2030/31
		$8,000	$308,000	$26,000	$8,000	$8,000

9.7.4 Asset Improvement and New Assets

Currently, there are no new compost assets planned. Investigations into alternative technologies occur from time to time but have been ruled out for now (e.g. vermicomposting and high-rate composting).

9.7.5 Asset Disposal

Assets are typically disposed of as waste through a metal recycler. The decision-making around whether to repair or replace (therefore dispose of) an asset is determined by staff judgement at the time. The trommel screen requires replacement within the next ten years. As this is upcoming, some planning around how to dispose of this asset is needed as it is a large piece of equipment.

9.8 Closed Landfills and Ashhurst Transfer Station

9.8.1 Lifecycle Management

The Ashhurst and Awapuni Closed Landfills require ongoing management. This is more intensive at the Awapuni Closed Landfill given the scale of it, the fact that it is partially lined and has a gas collection system. Associated with the Ashhurst Closed Landfill is the Ashhurst Refuse Transfer Station, which has been modified to also accept green waste.

Table 44 summarises the links between service levels and the management of the lifecycle of the closed landfill assets.

Table 44: Lifecycle Management of the Closed Landfill and Transfer Station Assets

Life Cycle Intent Statement	Indicator	Short Term Goal	Long Term Goal	Risks	Life Cycle Impacts
We provide collection services to manage waste in an environmentally responsible manner and maximise the amount of waste diverted from landfill.	• Closed landfill consent conditions are met. • Landfill gas quality.	• Comply with consent conditions. • Generate electricity from landfill gas until yield and quality drops.	• Renew consents and identify investment to mitigate environmental effects.	• Increased environmental standards could require significant investment at landfills upon renewal of consents.	• Optimised maintenance and renewals.

Life Cycle Intent Statement	Indicator	Short Term Goal	Long Term Goal	Risks	Life Cycle Impacts
We manage our services in a financially sustainable way.	• Transfer Station fees set annually.	• Set fees at an appropriate and fair level.	• Rationalise the need for a Transfer Station in conjunction with a review of other property.	• Low fees result in overuse of service. • High fees result in illegal dumping.	• Net cost is minimised for the Transfer Station.

9.8.2 Operations and Maintenance

Scope

The following activities are included within operation and maintenance of the closed landfills at both Awapuni and Ashhurst:

- Operations:
  - Site housekeeping (general tidy)
  - Maintain access points
  - Cash handling
  - Daily monitoring of gas
- Proactive maintenance
  - Weed spraying
  - Capping with compost
  - Testing quarterly (Awapuni only)
  - Frequent walkovers (Awapuni only)
  - Address asset wear and tear
- Reactive maintenance
  - Asset failure

Operational and maintenance practices for the closed landfill are touched on in Awapuni Resource Recovery Park and Closed Landfill SLA, but the specific tasks are documented in the Awapuni Landfill Post-Closure Management Plan. There is also an Awapuni Closed Landfill Gasfield and Cogeneration unit Operation and Maintenance SLA that outlines how to manage, operate and maintain the gas field and associated cogeneration engine at the Awapuni closed landfill site. These agreements were developed to provide the required levels of service under the previous internal service delivery model. Even though it is no longer required due to a change in the service delivery model, these agreements are still the best record of the scope of operational and maintenance tasks.

Procedures

The Awapuni Closed Landfill currently has a Daily Monitoring Data SOP. This was last updated in 2019, although no current review schedule is in place. No other SOPs are defining the operations and maintenance involved in the Awapuni closed landfill. The weighbridge requires SOPs to be written regarding; weighbridge operations, the key collect and return procedure, and sales and cash handling procedures. Knowledge in these areas is currently passed on by staff through experience, therefore standard procedures are required to ensure appropriate training and correct task completion.

The requirement and frequency of the listed operation and maintenance activities are determined by the Awapuni site staff. There is no definitive maintenance schedule documented. The knowledge and experience of the site staff initiate these activities, and are enforced by the legal requirements associated with closed landfill aftercare, which are a guide was provided by the Ministry of the Environment in 2001. As the Awapuni closed landfill is larger than the Ashhurst site, more work is required to maintain the space. Producing and implementing a formal maintenance schedule will help ensure the landfill is decomposing as it should and is not harmful to the community or environment.

The Awapuni landfill is tested quarterly and has frequent walkovers due to the quantity of staff at the Awapuni site regularly. Resource consents are granted for compliance with the closed landfills rules and regulations. In February 1994 PNCC was granted a suite of resource consents by the Manawatu-Wanganui Regional Council for the Awapuni closed landfill. These are:

- Water Permit 3962 – Divert Stormwater to Soakage
- Discharge Permit 3963 – Discharge of Stormwater from Soakage to Ground
- Discharge Permit 3964 – Discharge Stormwater to Surface Water
- Discharge Permit 3965 – Discharge Contaminant (Leachate) to Ground
- Discharge Permit 3966 – Discharge Contaminant (Landfill Gas, Dust and Odour) to Air
- Discharge Permit 3967 – Discharge Contaminant (Refuse and Recirculated Leachate) to Ground

The discharge permits that allow contaminant discharge as a result of combustion and flaring of landfill gas to air is set to expire in July 2031.

Annual reports are provided to Horizons Regional Council to support and confirm compliance with the resource consents. The reporting involves monitoring and tests carried out by a technical officer, which contributes to maintenance activities. A separate operational budget is provided for the resource consenting process, shown in Table 45.

There are no specific SLAs documented for the Ashhurst Closed Landfill. As the operational requirements are the same, if not less than, those at the Awapuni site, the SLA's directed at the Awapuni landfill are also used to define the operational services required at Ashhurst. As there are also no SOPs directly assigned to the Ashhurst landfill operations and maintenance, so the same processes are adopted from the available Awapuni landfill SOPs.

Horizons Regional Council issued two resource consents for the Ashhurst Closed Landfill:

- Resource Consent 105346: Discharge Permit to discharge leachate to land
- Resource Consent 105405: Discharge Permit to discharge stormwater to land

These resource consents were issued in September 2010 to replace consent 6155 and expire in July 2033. There is an operation programme assigned to the consenting process hence the budget provided in the 2023/24 financial year captured in Table 45 below.

Table 45: Proposed Operation Programmes for the Closed Landfills

Prog. Type	Prog. No. & Name	Proposed 10 Year Plan Budgets				
Operational	1886 - City-wide - Rubbish & Recycling - Resource Consent Application Renewals	2021/22	2022/23	2023/24	2024/25	2025/26
		$0	$0	$12,000	$98,000	$0
		2026/27	2027/28	2028/29	2029/30	2030/31
		$28,500	$25,000	$0	$0	$0

9.8.3 Renewal Plan

The assets located from the corner of Tip Road (where it meets Maxwell's Line) up to and including the Awapuni site fall under Waste Management to manage. The assets at the Awapuni closed landfill are; the weighbridge and kiosk, roads, fences, and civil infrastructure including the three water services.

A rolling renewals programme (see Table 46) is in place to upkeep these assets at the Awapuni closed landfill site. This covers work such as road resurfacing, chip seal resurfacing, asphalting the Awapuni RDOP area, and fence replacements. Although the roading assets are managed by the Solid Waste activity, collaborative work is carried out with the roading transport team to help determine when renewals are required in this area.

There is a preference for these roads to be maintained more frequently due to the nature of the traffic using these roads (heavy load vehicles) and the differential ground movement caused by the closed landfill settlement beneath the roads.

The weighbridge associated assets include; load cells, steel deck, kiosk, security cameras, and the civil infrastructure that supports these. Any required renewals associated with the weighbridge are captured in the rolling renewals budget allocated to both the closed landfills and transfer station sites.

The assets at the Ashhurst Closed landfill include the clay capping and pine plantation (for bank stabilisation). An allowance is made for minor renewals at the Ashhurst Transfer Station.

Table 46 details the proposed budgets for the Closed Landfills and Transfer Station.

Table 46: Proposed Programme Budgets for the Closed Landfills and Transfer Station

Prog. Type	Prog. No. & Name	Proposed 10 Year Plan Budgets				
Renewal	185 - Closed Landfills and Transfer Stations - Site Renewals	2021/22	2022/23	2023/24	2024/25	2025/26
		$35,000	$35,000	$35,000	$330,000	$55,000
		2026/27	2027/28	2028/29	2029/30	2030/31
		$35,000	$35,000	$35,000	$50,000	$50,000

9.8.4 Asset Improvement and New Assets

Table 47 contains a summary of the proposed capital new budgets for the Closed Landfills and Transfer Stations and include:

- Landscaping is carried out on areas of the Awapuni Closed Landfill once sufficient biosolids have been layered over the clay capping.
- It is anticipated that a second weighbridge will be required for outgoing traffic due to capacity limits of the current single weighbridge. It will also allow for redundancy and continued operations during weighbridge maintenance, servicing and recalibration.
- Extension of the security fencing to encompass the entire site.
- New facilities for construction and demolition waste are likely to be located at the Awapuni Resource Recovery Park as it has space.

Table 47: Proposed Capital New Programmes for the Closed Landfills and Transfer Station

Prog. Type	Prog. No. & Name	Proposed 10 Year Plan Budgets				
Captital New	721 - Awapuni Closed Landfill - Landscaping Development	2021/22	2022/23	2023/24	2024/25	2025/26
		$18,000	$18,000	$18,000	$18,000	$18,000
		2026/27	2027/28	2028/29	2029/30	2030/31
		$18,000	$18,000	$18,000	$18,000	$18,000
Captital New	1105 - Awapuni Closed Landfill - Weighbridge and Ancillary Infrastructure Development	2021/22	2022/23	2023/24	2024/25	2025/26
		$0	$0	$0	$0	$350,000
		2026/27	2027/28	2028/29	2029/30	2030/31
		$0	$575,000	$0	$80,000	$0
Captital New	1371 - Closed Landfills and Transfer Stations - Safety, Security and Development	2021/22	2022/23	2023/24	2024/25	2025/26
		$159,000	$175,000	$50,000	$130,000	$60,000
		2026/27	2027/28	2028/29	2029/30	2030/31
		$30,000	$0	$0	$0	$0
Captital New	1810 - City-wide - Diversion of Waste from Landfill - New Materials Development	2021/22	2022/23	2023/24	2024/25	2025/26
		$70,000	$0	$250,000	$0	$190,000
		2026/27	2027/28	2028/29	2029/30	2030/31
		$0	$0	$0	$0	$0

9.8.5 Asset Disposal

There is no defined disposal process for closed landfill assets. Road resealing does not result in an asset being disposed of. Other assets such as fence materials and civil infrastructure are disposed of through staff judgement and experience.

When the weighbridge and kiosk were upgraded in 2013, the different assets were disposed of in separate ways. The old kiosk has not yet been disposed of; it currently sits at the Awapuni site but now in a different location. It is not currently in use. The electrical equipment was moved to the new weighbridge kiosk and was put in use there and therefore were not disposed of either.

9.9 Lifecycle Management Alternatives

As stated in the SAMP lifecycle decision making is an area of improvement for us. This includes consideration of lifecycle alternatives for Resource Recovery. Thus, for all types of Resource Recovery Assets lifecycle management alternatives have not been well considered. This will be addressed in the proposed lifecycle decision making improvements for us, which include risk-based analysis of alternatives and embedding of the business case development process.

10. Financial Summary

This section outlines the long-term financial requirements for the operations and maintenance, capital renewal and capital new investments to meet the agreed levels of service for the Resource Recovery Activity. These financial requirements have been identified and assessed individually throughout this AMP and are summarised in this section. This section includes a discussion on the strategies used to develop the financial budgets, as well as the assumptions and risks inherent in the budget forecasts.

10.1 Financial Forecast

10.1.1 Proposed Operations and Maintenance Expenditure

Existing operations and maintenance budgets were reviewed against historic expenditure and levels of service requirements. This was used to forecast future budget needs for existing services and assets, along with an estimate of the budget required for new services and assets programmed to be created.

Figure 44 below shows the breakdown of the proposed operations and maintenance budgets for the next ten years. The different colours in the columns show budgets for different expenditure categories:

- Maintain Service Level or MSL (pink): budgets for the management, planning and operation and maintenance of the existing assets (existing budgets);
- Operational Programmes (blue): budgets for discrete operational programmes and increases in maintenance and operational budgets. For example, the collection of base asset condition data; and
- Capital New (green): budget allowance for operation and maintenance due to asset improvement and the creation of new assets each year.

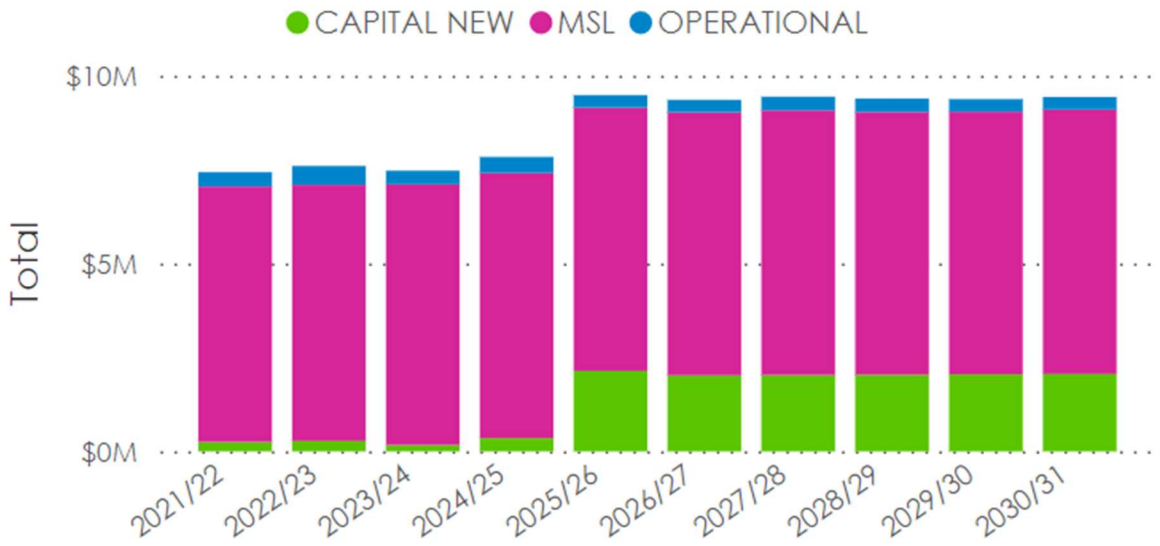


Figure 44: Proposed Ten-Year Operations and Maintenance Expenditure

Section 9 summarised the total level of investment required to deliver levels of service sought by the public. This did not consider existing budgets or what mechanism would be used to fund the service or proposed investment. However, it was evident there was a gap between existing levels of investment and what was required for the activity. Operational and maintenance programmes have been developed to meet this 'gap', as opposed to adjustments to the operations and maintenance (MSL) budgets.

The graph above shows a forecast increase in investment occurring at year five (2025/26). This is primarily being driven by the proposed kerbside food waste collection and processing service development (programme 1910 – Kerbside Food Waste Collection and Processing Service

Development). This investment would introduce a whole new recycling service and costs associated with this.

Other Operations and Maintenance costs are forecast to remain relatively steady throughout the ten years.

Operational and Maintenance Forecast Reliability

As a service heavy activity (i.e. operational and maintenance expenditure makes up most of the overall investment) forecasts on delivering existing levels of service are reasonably reliable. It is where levels of service change, such as with the introduction of a new service, that expenditure will show a more significant change.

As the operational and maintenance procedures are collected and documented, there will be more certainty and reliability in forecasting the cost of delivery by creating a bottom-up approach rather than extrapolating previous costs.

There is however uncertainty related to external influences such as government policy on revenue from the waste levy, the cost to dispose of waste and volatile commodity prices for recyclables.

Figure 45 shows further detail on the breakdown of the MSL budgets (excluding revenue and inflation). Labour accounts for some $1.6M each year, or about a quarter of the budget. Less than 2% of the budget is for consultants, who are typically used for specialist investigations and design work. Maintenance costs are associated with consumables, plant and physical works and contribute to nearly half the budget. Administration costs cover insurance, software, rates (Regional Council) amongst other items.

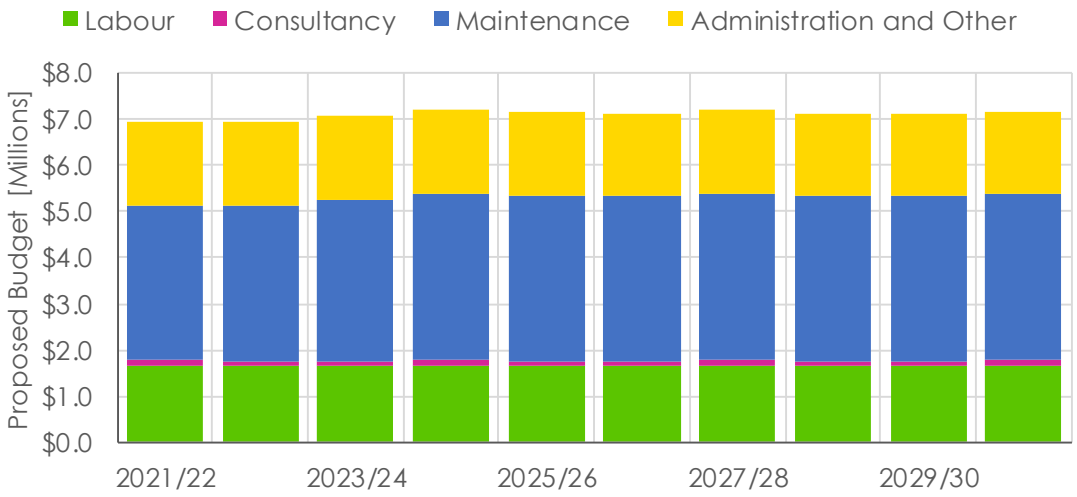


Figure 45: Resource Recovery Proposed MSL Budget Breakdown

10.1.2 Proposed Renewal Expenditure

The renewals expenditure forecast is mostly based on the asset information out of IPS. Renewal budget for different asset types was created using the asset install date, estimated useful life, and the replacement cost from the recent asset revaluation.

Figure 46 shows the total proposed rubbish and recycling renewals budget for the next ten years. The graph shows a steady increase over the ten years with some spikes to accommodate individual renewal activities, generally associated with programme 185 - Site Renewals.

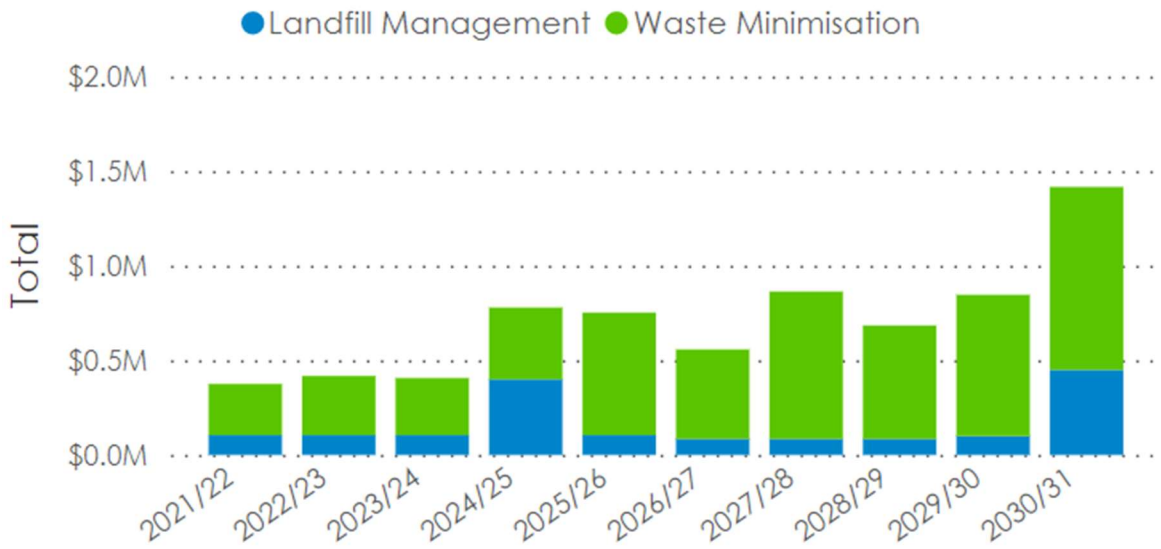


Figure 46: Proposed 10-Year Renewal Expenditure

Capital Renewal Forecast Reliability

There is uncertainty when using the estimated useful life of any asset for forecasting renewals budget.

The reliability of the renewals forecast will improve once asset condition and performance data are obtained. However, the budgets are expected to be of the right quantum over 30 years, with the condition data changing the date of renewal of specific assets as opposed to the overall budgets.

Another factor that may affect the certainty of the long-term renewals forecast is the rate of increase in the value of the assets. If the overall valuation increases at the same rate as inflation, then the forecast renewals budget with an inflation adjustment will adequate. If the asset value increases at a greater rate than inflation, as has occurred in the last three years, then the forecast renewals budgets will need to be revised.

10.1.3 Proposed New Capital Expenditure

Figure 44 shows that the overall level of expenditure proposed varies significantly throughout the ten years. The significant spike in years three and four is due to the proposed food collection service (phased to allow for a trial to be carried out to confirm the business case). A new RDOP is planned for 2025/26 and a major upgrade of the Material Recovery Facility is assumed to occur in 2027/28. Every year there is generally some minor works associated with providing for growth (new bins and crates), landfill landscaping and public space bins.

Figure 47: Proposed Ten-Year New Capital Expenditure

Capital New Forecasts Reliability

The budget forecast for each capital new programme is based on the assumptions and information available for that programme, and thus reliability varies between programmes. The data associated with each programme indicates the reliability of the budget for that programme.

The food waste collection is subject to a pilot to confirm feasibility and costs. The timing and need for a new RDOP are subject to a more comprehensive review of the future of the Ferguson Street RDOP. As mentioned, there are significant assumptions around the timing, as well as the timing of the Material Recovery Facility upgrade.

10.2 How we Will Pay for it

This AMP focuses on identifying the optimum (lowest lifecycle) cost for waste management assets necessary to produce the desired LoS. Current funding sources available for waste management assets include rates and revenue from rubbish disposal charges and levies, sale of recyclable material and gas cogeneration. Further information can be found in our Financial Strategy.

- **Operations and maintenance**. The process for funding rubbish and recycling operations and maintenance is as follows:
  - The total operations and maintenance cost are estimated;
  - Revenues from rubbish bag sales, gate charges, leases and material sales are estimated;
  - The shortfall between the costs and revenues is funded through a targeted rate over those ratepayers receiving the service;
- **Capital Renewal.** Funded from targeted rates revenue collected to cover renewal costs.
- **Capital New development**. Funded from subsidies and grants (when available), user contributions, reserves and, where necessary, from borrowing.

There is a move to reduce the impact on rates-funding of this activity through increased emphasis on user pays, with surplus funds applied to waste minimisation strategies.

Implementation of new waste minimisation initiatives depends upon the merit of business cases specific to each proposal. Costs associated with those projects will need to be matched by a corresponding increase in generated revenue.

10.2.1 Development Contributions

No development contributions are sought for the Resource Recovery Activity because:

- Recycling bin provision does not fall within the LGA definition of network or community infrastructure able to be funded from development contributions. Per our Revenue and Financing Policy, expenditure is funded from borrowing, which will be serviced and repaid from rates over the average expected life of the bins.
- Although the Material Recovery Facility is an important facility, at this stage, we have determined that the development contributions policy will not extend to funding community infrastructure (other than buildings and works on parks and reserves). Therefore, growth-related upgrades to the Material Recovery Facility will be funded by borrowing per our Financial Strategy.

10.3 Financial Forecast Uncertainty

10.3.1 Potential Effects of Uncertainty

Generally, expenditure forecasts are based on the best available information. The longer-term development budgets will be refined both in scope and cost as these programmes get closer to implementation. Those programmes that are for growth form the basis for development contributions assessed over a period of thirty years. Periodic revision and adjustment to the schedule of works in the three-year rolling programme mitigate any negative effect of uncertainty of the financial forecasts.

Should the required level of funding not be available then there is a potential risk of deferred maintenance or renewal or development that would not be noticeable immediately, but which could build up over some time and result in not meeting agreed levels of service. This is mitigated through an extensive review and revision of asset management requirements that take place on a three-yearly cycle enabling corrective action to be taken before a substantial backlog is built up.

The ideal cost accuracy for any programme (operational, renewal and new) is based on when the programme first appears in the LTP. These ideal accuracies are as follows:

- **Years 1 to 3 (2021/22 -2023/24)**: The scope and pricing of work should be reliable, based on good market information for unit rates, etc.
- **Years 4 to 6 (2024/25 - 2026/27)**: Estimates should be reliable, with detailed design work has not been carried out.
- **Years 7 to 10 (2027/28 - 2030/31)**: Estimates generally based on a high-level idea of what the programme will involve.
- **Years 11 to 30 (2031/32 onwards)**: Rough order costing based on the estimated quantum of work; forecasts could change significantly with further investigation.

10.3.2 Capital Programme Deliverability

The quantum of capital investment for the Resource Recovery Activity is modest compared to other Activities such as the Three Waters and Transport infrastructure. The only significant proposed capital investment is in the plant and equipment required to support a kerbside food waste collection and processing service, and a new RDOP. As standalone pieces of work, there are no perceived issues relating to deliverability, should funding for it be approved.

11. Plan Monitoring and Improvements

Improvements to Resource Recovery Asset management practice have been identified in several ways:

- Relevant improvement items from the 2018 AMP that have yet to be completed;
- Activity specific recommended improvements from the 2019 Asset Management Maturity Assessment;
- Improvement actions from the review of the valuation; and
- Improvements identified as part of the preparation of this AMP.

These sources have identified many actions, not all of which will be able to be completed before the next revision of the AMP. To address this a pan-activity improvement register has been compiled following some of the general improvement items in the Asset Management Maturity Assessment. This is prioritised, and the Improvement Plan detailed in this section focuses on the improvements that could be made before the next revision of the AMP.

11.1 2018 AMP Improvement Plan Progress

The previous 2018 AMP listed some general improvement items and then a more detailed list of improvement tasks specific to the Activity. These are shown as they related to each other along with progress on each item in table xxx below.

Some of the improvement items previously listed are part of business as usual (BAU) or core business, so are therefore not improvement items in the sense that they are not a one-off action that improves practice. Unless there is a related one-off improvement item these previous items will not be carried through to the 2021 Improvement Plan.

The Asset Management Maturity Assessment (AMMA) was carried out independently of the previous AMP improvement items. For some of the previous AMP improvement items that were not complete, the AMMA identified the same or a similar improvement item. These AMMA items are detailed in the SAMP or in xxx below. Where the same or similar measure has been identified in the AMMA, the AMMA action will be used from now on in favour of the 2018 improvement item.

The quality of our Asset Management practice has been enhanced over the past 20 years in line with the objective to match, but not lead, industry 'best practice' in New Zealand. This version of the AMP incorporates improvements and changes undertaken over the last three years.

The previous 2018 AMP improvement items are shown in Table 48 along with how these have progressed. Many of the improvement items previously listed are continual improvement items that relate to key inputs to the AMP. Many of these items are currently being undertaken and therefore the improvement component to them is related to how that process can be improved within the activity.

Table 48: 2018 AMP Improvement Plan Progress

2018 AMP Improvement Item	2018 AMP Improvement Tasks	Progress Made	Completed?	Considered BAU?	Superseded by AMMA Action?	Carried to 2021?
Capital renewal and development project planning – further development of processes to consider a sustainable development approach.	Relates to several tasks.	???	N	N	Y	N
Review demand projections on an on-going basis consistent with our Residential Growth Strategy.	1.1 Review impact of our strategies and policies on demand projections.	With the preparation of the SAMP and 10YP demand projections have been reviewed.	Y	Y	Y	N
	1.2 Review project priorities based on risk/cost/benefit analysis.	Our Growth Strategies have been reviewed and updated by Strategy and Planning.	Y	Y	Y	N
Continue to develop predictive modelling and risk-based approaches to help prioritise renewal programmes and better manage risks and costs in achieving the desired outcomes.	3.1 Undertake annual assessment of asset condition, age and environmental factors to determine residual asset lives (predictive modelling).	The move to predictive modelling has been explored but not yet implemented or regularly updated (updating the model is BAU, but its development is improvement).	N	N	Y	N
	3.2 Develop and action processes to identify and prioritise risk mitigation options (ODM). Prepare renewal programme.	A renewal programme has been developed and risks of budget constraints illustrated.	Y	Y	Y	N
Update city-wide asset development plans as growth and actual development necessitates.	Review development plans for assets.	A Waste Management and Minimisation Plan is in place.	Y	Y	Y	N

2018 AMP Improvement Item	2018 AMP Improvement Tasks	Progress Made	Completed?	Considered BAU?	Superseded by AMMA Action?	Carried to 2021?
Periodically review risk assessments.	5.4 Develop a process for regular review of risk.	Review of corporate risk management framework in progress.	Y	Y	Y	N
Further develop appropriate mitigation strategies for our critical assets in the event of a major natural hazards and programmes to improve resilience of critical assets from natural hazards.	1.3 Review mitigation strategies for major natural hazard events impacting on Resource Recovery facilities.	Overall, this is an area that requires further improvement.	N	N	N	Y
	2.6 Review/Identify critical assets in the register.	Critical assets have been identified.	Y (part)	N	Y	N
	5.5 Develop and enhance measures for resilience of critical assets to natural hazards.	Multiple resilience programmes have been included in this AMP to both carry out physical works to improve resilience and to undertake studies of our resilience strategies.	N	N	N	Y
Operations and maintenance – on-going review of contracting and internal service agreement strategies to achieve the best balance of risk transfer, cost and performance.	4.1 Document O&M strategy and O&M processes for optimising programmes (benefit/cost approach).	Documentation of O&M process and strategies requires further improvement.	N	N	Y	N
Operations and maintenance – on-going review of contracting and internal service agreement strategies to achieve the best balance of risk transfer, cost and performance. *(Continued)*	4.4 Scope up external contract for specialist mechanical and electrical maintenance services to achieve improved service, transparency and value.	This is an area that also still requires improvement.	N	N	N	Y

2018 AMP Improvement Item	2018 AMP Improvement Tasks	Progress Made	Completed?	Considered BAU?	Superseded by AMMA Action?	Carried to 2021?
Asset information – on-going development of systems to meet all asset management needs, and the integration of asset information activities.	2.2 Review AM system data quality processes and improve as required. Develop Data Improvement Plan. Link with Task 3.1	Progress is only just starting to be made on data systems and documenting processes. A programme has been included in the 10 Year Plan for collection of condition data to support these actions.	N	N	Y	N
	2.3 Review and document condition assessment quality process/ programme (to support risk & predictive modelling)		N	N	Y	N
	2.4 Review performance data needs (reporting & decision-making) and document data capture quality process.		N	N	Y	N
	2.5 Analyse asset lives (using condition/ capacity/ performance data), and review / address data quality issues. Enter into AM system.		N	N	Y	N
Asset information. *(continued)*	2.9 Assess future options for development of AM system.	(See above)	N	N	Y	N

2018 AMP Improvement Item	2018 AMP Improvement Tasks	Progress Made	Completed?	Considered BAU?	Superseded by AMMA Action?	Carried to 2021?
Internal process improvements for Collaborative Working Practices, Service Procurement processes and Market Comparability assessments.	4.2 Review processes to ensure that competitive prices are obtained for services delivered, and that there is the correct balance between risk transfer, performance orientation and costs. (SLA comparability, core market data, schedules of prices) 4.3 Continue development of measure and value SLAs with further development of KPIs and deliverables. Detailed review of resource inputs to operation and maintenance activities to identify opportunities to do more for less. 9.1 Improve internal processes of SLA system and Market Comparability as required.	Due to internal restructuring the need to review internal service agreements and collaborative working practices no longer exists.	N/A	N/A	N/A	N/A
Level of service – undertake stakeholder consultation on new, major issues to update understanding of community expectations and preferences. Review levels of service with Council every three years.	7.1 Review LoS strategy and programme. 7.3 Undertake LoS Review with Council. 7.2 Undertake consultation on major issues, case by case.	LoS have been reviewed as part of the AMP process. New performance measures and LoS statements have been prepared. Consultation is normally undertaken on major issues as part of the 10 Year Plan process and/or the programme.	Y Y N	N N Y	Y Y N	N N N

2018 AMP Improvement Item	2018 AMP Improvement Tasks	Progress Made	Completed?	Considered BAU?	Superseded by AMMA Action?	Carried to 2021?
AM resource planning to ensure the recruitment, retention and development of sufficient and suitably qualified staff.	6.1 Adopt succession planning process to minimise risks relating to loss of key staff knowledge. 6.2 Skill gaps in AM are assessed and training programmes implemented to close any identified gaps.	This has been partially addressed by the formation of the Asset Planning Division. Further improvement is still required.	N N	N N	Y Y	N N
Review asset management strategy to take account of changes in our strategic direction and Government policy.	No specific tasks.	Council has undertaken a significant review of AM strategies internally. One of the results of this was the formation of the Asset Planning Division.	Y	N	Y	N

2018 AMP Improvement Item	2018 AMP Improvement Tasks	Progress Made	Completed?	Considered BAU?	Superseded by AMMA Action?	Carried to 2021?
(New item) Develop and improve internal AM practice.	1.6 Document changes to AMP programmes that arise through 10 Year Plan & AP processes.	This has been partially addressed by the formation of the Asset Planning Division, but some improvement is still required.	N	Y	N	N
	2.9 Review and update Programme Planning and Implementation (PPI) information in conjunction with AP & 10 Year Plan process.	Actions that are currently in train to address some of these tasks: • Preparation and approval of AM Policy • Establishment of an AM steering group to oversee AM practice and improvements • Development of AM KPIs in the SAMP • Investigation of programme and project data structure and tool	N	Y	N	N
	2.10 Develop user friendly database for the PPI information.		N	N	N	Y
	5.1 Establish annual management review meetings to consider AM performance.		N	N	Y	N
	5.2 Establish an Asset Management Coordinating Group to drive improvement plan & next AMP over the next 3yrs.		N	N	Y	N
	5.3 Develop overall AM strategy leading up to next AM review and get adopted by MT		N	N	Y	N
	5.6 Develop & implement process to ensure that there is better integration between all AMPs		N	N	Y	N

2018 AMP Improvement Item	2018 AMP Improvement Tasks	Progress Made	Completed?	Considered BAU?	Superseded by AMMA Action?	Carried to 2021?
(New item) Develop and improve internal AM practice. *(Continued)*	5.7 Develop KPIs to monitor progress with the Improvement Plan.	(New)	N	N	Y	N
	6.3 Promote organisational understanding of AM practices and outcomes.		N	N	Y	N
(New item) Revise AMP for 2021-31 LTP	8.1 AMP Maturity Assessment and identification of key focus areas for 2021 Plans.	The AMPs have been completely revised for the 2021-31 LTP.	Y	Y	N	N
	8.2 Prepare AMP using outputs of this improvement programme and incorporate further recommendations from the 2017 Peer Review & Audit NZ into the Plan.		Y	Y	N	N
	8.3 Update AMP programme and financials.		Y	Y	N	N

11.2 Maturity Assessment

An external review of our asset management practice was undertaken in July 2019 by Infrastructure Associates Ltd using the New Zealand Treasury framework. The broader discussion on the results of this are outlined in the SAMP. One of the outputs of the review was a list of Activity specific improvement items. Many of the more generic improvement items have and are continuing to be addressed by the formation of the new Asset and Planning Division, alongside the development of the Asset Management Policy and Strategic Asset Management Plan.

Table 49: Resource Recovery Specific Improvement Items from Maturity Assessment

AM Function	Recommended Improvements	AMMA Priority
Policy and Strategy	Programme the development of WMMP, AMP and LTP planning activities.	High Yr1
Policy and Strategy	Ensure that the Asset Management Policy provides specific guidance for the management of Resource Recovery Assets.	Medium Yr2

AM Function	Recommended Improvements	AMMA Priority
Levels of Service and Performance Management	Review rubbish and recycling levels of service performance measures.	Medium Yr1
Asset Register Data	Review asset data and determine where gaps are. Work with new asset data team to fill gaps.	High Yr2
Asset Performance and Condition	Schedule detailed condition and lifecycle assessments of critical assets to identify required change in design, operation, and maintenance to achieve the required level of resilience and performance.	High Yr1
Operational Planning	Develop a more proactive inspection and maintenance plan for critical assets.	High Yr1
Financial Planning	Review mix of maintenance, operations and capital funding.	Medium Yr2
Audit and Improvement Planning	Along with other activities, develop combined Council improvement plan.	High Yr1

11.3 Items from AMP Process

Table 50 contains a summary of the improvement items identified as part of the update of this AMP.

Table 50: Resource Recovery Specific Improvement Items from AMP Process

AMP Section	AM Function	Recommended Improvement	For Improvement Register (Not Identified Already)
Lifecycle Management	Operational Planning	Investigate the installation of sensors on public space bins and emptying based on need, including need for additional vehicles.	Y
Lifecycle Management	Operational Planning	Undertake study of public space bin use to gather information to support bin design and placement policy.	Y
Lifecycle Management	Operational Planning	Undertake gap analysis of Waste Management operating procedures for all operations and maintenance to replace the SLAs and develop procedures where gaps are identified (including incorporation into ProMapp). Schedule rolling two-year updates.	Y
Lifecycle Management	Operational Planning	Review and update existing Waste Management operating and maintenance procedures (including incorporation into ProMapp) and schedule rolling two-year updates.	Y
Lifecycle Management	Asset Register Data	Develop and implement processes for asset data collection and the continual updating of data, including condition.	Y

AMP Section	AM Function	Recommended Improvement	For Improvement Register (Not Identified Already)
Lifecycle Management	Asset Register Data	Develop and implement processes for determining critical assets and record against assets in IPS.	Y
Demands and Drivers	Operational Planning	Develop processes to utilise data from RFID tags to improve operational efficiencies	Y
Lifecycle Management	Managing Risk	Update Business Continuity Planning	Y
Lifecycle Management	Capital Works Planning	Prepare and implement a renewals strategy for the MRF (and associated processes).	Y
Lifecycle Management	Managing Risk	Prepare and implement a MRF (and associated processes) inspection and maintenance programme and schedule in IPS.	Y
Risk Management	Managing Risk	Complete risk assessment for the Waste Management Activity.	Y
Risk Management	Managing Risk	Assess resilience of critical assets to disasters.	Y
Demands and Drivers	Operational Planning	Develop process for collection route optimisation and resulting changes taking into consideration growth areas (include GPS data and fleet needs in this process)	Y
Lifecycle Management	Operational Planning	Determine (and document) an asset disposal process for Waste Management	Y
Demands and Drivers	Asset Register Data	Review asset cost reporting needs and carry out gap analysis in IPS. Implement financial structure in IPS in order to track asset costs by Activity and Sub-Activity (or equivalent in new ERP).	Y
Demands and Drivers	Operational Planning	Undertake capacity review of recycling processing across the city to take into account growth.	Y
Lifecycle Management	Service Delivery	Put in place a formal mechanical maintenance contract for the MRF assets.	N

11.4 Improvement Plan

The purpose of the Improvement Plan is to:

- Identify and develop the implementation of AM planning processes.
- Identify, programme and resource measures required to complete studies or measures to confirm planning assumptions or to gather information required to improve the reliability/confidence of information used to develop the AMP.
- Identify and prioritise ways to cost-effectively improve the quality of the AMP.
- Identify indicative timescales, priorities, and human and financial resources required to achieve AM planning objectives.

Table 51 contains the Resource Recovery Improvement Plan with an indicative timeframe for implementation. Improvement items are listed in priority based on targeting the biggest gaps identified in the Asset Management Maturity Assessment.

Table 51: Resource Recovery Improvement Plan

Year	Programme Number	Improvement Items	Description of Improvement Item
2021/22	PROG-008	IMP-0158	Along with other activities, develop combined Council improvement plan.
	PROG-056	IMP-0045	Map AM processes in ProMapp.
		IMP-0293	Review and update existing Waste Management operating and maintenance procedures (including incorporation into ProMapp) and schedule rolling two-year updates.
	PROG-017	IMP-0005	Review the levels of service for each activity through customer engagement.
		IMP-0006	Develop the non-infrastructure (community/customer) LoS and then review the infrastructure (technical) LoS.
		IMP-0153	Review rubbish and recycling levels of service performance measures.
	PROG-036	IMP-0016	Review the policy governing asset condition and performance assessment in terms of content and frequency.
	PROG-001	IMP-0151	Programme the development of WMMP, AMP and LTP planning activities.
	PROG-073	IMP-0037	Show the renewal requirement for different options and the funding available in the Strategic AMP. The consequences of funding constraints should be articulated clearly.
	PROG-039	IMP-0013	Review the asset data hierarchies against industry standards.
	PROG-040	IMP-0014	Review asset information needs, conducting a gap analysis, and implementing a data improvement project. Recognise the approach may be difference for each of the activities/portfolios.
		IMP-0154	Review asset data and determine where gaps are. Work with new asset data team to fill gaps.
		IMP-0225	Review assets grouped in the AMIS with a view to moving to stating actual quantities.
		IMP-0294	Develop and implement processes for asset data collection and the continual updating of data, including condition.
		IMP-0338	Ensure data systems enable analysis and creation of understanding about assets

Year	Programme Number	Improvement Items	Description of Improvement Item
2021/22	PROG-054	IMP-0030	Ensure that clear renewal and maintenance plans are developed and communicated with key staff and broader stakeholders.
		IMP-0156	Develop a more proactive inspection and maintenance plan for critical assets.
		IMP-0292	Undertake gap analysis of Waste Management operating procedures for all operations and maintenance to replace the SLAs and develop procedures where gaps are identified (including incorporation into ProMapp). Schedule rolling two-year updates.
	PROG-055	IMP-0299	Prepare and implement a MRF (and associated processes) inspection and maintenance programme and schedule in IPS.
	PROG-063	IMP-0303	Determine (and document) an asset disposal process for Waste Management
	PROG-064	IMP-0302	Develop process for collection route optimisation and resulting changes taking into consideration growth areas (include GPS data and fleet needs in this process)
		IMP-0305	Undertake capacity review of recycling processing across the city to take into account growth.
	PROG-042	IMP-0018	Develop processes for contractors and inhouse staff to collect condition information, using mobile data applications.
	PROG-048	IMP-0047	Review the functionality capabilities of each system and develop processes to use them effectively through training and process development.
	PROG-047	IMP-0132	Ensure that there is at least one other database administrator who can manage IPS.
2022/23	PROG-023	IMP-0027	Assess the resilience of the network across all the activities.
		IMP-0099	Develop and enhance measures for resilience of critical assets to natural hazards.
		IMP-0301	Assess resilience of critical assets to disasters.
	PROG-024	IMP-0297	Update Business Continuity Planning
	PROG-022	IMP-0300	Complete risk assessment for the Waste Management Activity.
	PROG-030	IMP-0050	Develop pre-approved procurement panels and formalise contracts with more clearly defined KPIs and monitoring.
		IMP-0092	Scope up external contract for specialist mechanical and electrical maintenance services to achieve improved service, transparency and value
	PROG-062	IMP-0334	Develop renewal strategies and get them approved by ILT

Year	Programme Number	Improvement Items	Description of Improvement Item
2022/23	PROG-038	IMP-0017	Complete condition surveys on all critical assets, and schedule regular inspections with the frequency based on criticality.
		IMP-0155	Schedule detailed condition and lifecycle assessments of critical assets to identify required change in design, operation, and maintenance to achieve the required level of resilience and performance.
	PROG-046	IMP-0291	Undertake study of public space bin use to gather information to support bin design and placement policy.
		IMP-0296	Develop processes to utilise data from RFID tags to improve operational efficiencies
	PROG-061	IMP-0130	Develop IPS capability to produce renewal plans for wastewater and stormwater.
	PROG-060	IMP-0298	Prepare and implement a renewals strategy for the MRF (and associated processes).
	PROG-050	IMP-0219	Investigate and implement a method of capturing current contact costs to validate valuation unit rates.
	PROG-058	IMP-0157	Review mix of maintenance, operations and capital funding.
	PROG-035	IMP-0295	Develop and implement processes for determining critical assets and record against assets in IPS.
	PROG-049	IMP-0304	Review asset cost reporting needs and carry out gap analysis in IPS. Implement financial structure in IPS in order to track asset costs by Activity and Sub-Activity (or equivalent in new ERP).
2024/25	PROG-059	IMP-0066	Analyse asset lives (using condition/ capacity/ performance data), and review / address data quality issues. Enter into AM system
		IMP-0220	Develop a process to ensure condition data is used to estimate expected lives of individual assets and overall asset groups.
	PROG-002	IMP-0152	Ensure that the Asset Management Policy provides specific guidance for the management of Resource Recovery Assets.
	PROG-069	IMP-0290	Investigate the installation of sensors on public space bins and emptying based on need, including need for additional vehicles.

A. Key Assumptions

The following assumptions have been adopted for this AMP.

Inflation

Financial projections are based on July 2020 estimated costs. No inflation factors have been applied.

BERL inflation factors will be applied to the programmes and budgets in the 10 Year Plan. Budgets for successive years of the Annual Budget are based on the corresponding year of the 10 Year Plan.

Depreciation

Average asset lives at a project level for new works have been used to calculate depreciation.

New works are a small percentage of total depreciation. Differences from actual due to averaging of lives are relatively minor.

Vested Assets

On average the same level of assets are gifted to the Council as a result of subdivision as has occurred over the last 5 years.

Note that the rate of change of development will be taken account of in future revisions of the AMP and subsequent O&M and depreciation taken into account.

Service Potential

Service potential of the asset is maintained by the renewal and maintenance programme.

There is low risk that the service potential of the asset will not be maintained by implementation of the renewal programme since this is based on reliable asset and condition information from the asset management system.

Asset lives

Asset lives are accurately stated.

The risk that lives are inaccurate is low. Lives are based on generally accepted industry values modified by local knowledge. The asset database gives a good knowledge of asset condition and an extensive field assessment has recently been undertaken.

Natural Disasters

That there are no major natural disasters during the planning period requiring additional funds.

There is medium risk of a natural disaster occurring during this period requiring additional funds to repair or reinstate assets. Some further provision for increasing the resilience of the assets has been built into this plan but there is still further work to be undertaken to determine the desired level of resilience and the further asset improvements to achieve this.

Council Policy

No significant change to Council policy that impacts on assets and services.

Any significant change will require a full review of the AMP and implications identified at the time.

Interest Rate

An interest rate of 5.7% p.a. is used for debt on new work.

B. 30 Year Financial Forecasts

Table B1: Proposed Thirty Year Operations and Maintenance Budgets ['000s]

Year	Landfill Management	Waste Management	Waste Minimisation	Sub-Total	Operating Programmes (Revenue) [8]	Total
2021/22	$420	$1,721	$6,042	**$8,183**	$125	**$8,308**
2022/23	$441	$1,790	$6,050	**$8,280**	$162	**$8,442**
2023/24	$457	$1,899	$6,066	**$8,421**	$24	**$8,445**
2024/25	$466	$1,967	$6,533	**$8,966**	$90	**$9,056**
2025/26	$484	$1,975	$8,419	**$10,878**	($9)	**$10,869**
2026/27	$509	$1,980	$8,342	**$10,831**	($9)	**$10,822**
2027/28	$522	$1,986	$8,484	**$10,992**	$20	**$11,012**
2028/29	$553	$1,992	$7,859	**$10,403**	$17	**$10,419**
2029/30	$557	$1,997	$7,857	**$10,411**	($9)	**$10,402**
2030/31	$564	$2,004	$7,924	**$10,491**	($9)	**$10,482**
2031/32	$562	$2,009	$7,913	**$10,484**	($9)	**$10,476**
2032/33	$560	$2,015	$7,949	**$10,524**	($9)	**$10,515**
2033/34	$558	$2,020	$7,962	**$10,540**	($9)	**$10,531**
2034/35	$556	$2,026	$7,964	**$10,546**	($55)	**$10,491**
2035/36	$553	$2,031	$7,959	**$10,544**	($55)	**$10,489**
2036/37	$551	$2,036	$7,953	**$10,540**	($55)	**$10,485**
2037/38	$549	$2,037	$7,938	**$10,524**	($55)	**$10,469**
2038/39	$546	$2,038	$7,922	**$10,506**	($55)	**$10,451**
2039/40	$543	$2,039	$7,906	**$10,489**	($55)	**$10,434**
2040/41	$541	$2,040	$7,886	**$10,467**	($55)	**$10,412**
2041/42	$538	$2,042	$7,856	**$10,437**	($55)	**$10,382**
2042/43	$528	$2,044	$7,838	**$10,410**	($55)	**$10,355**
2043/44	$517	$2,046	$7,806	**$10,370**	($55)	**$10,315**
2044/45	$513	$2,048	$7,779	**$10,340**	($55)	**$10,285**
2045/46	$504	$2,050	$7,748	**$10,302**	($55)	**$10,247**
2046/47	$500	$2,052	$7,705	**$10,257**	($55)	**$10,202**
2047/48	$496	$2,054	$7,676	**$10,226**	($55)	**$10,171**
2048/49	$495	$2,056	$7,651	**$10,201**	($55)	**$10,146**
2049/50	$493	$2,058	$7,636	**$10,187**	($55)	**$10,132**
2050/51	$493	$2,058	$7,636	**$10,187**	($55)	**$10,132**

[8] See Table B2 below for details of Operating Programmes

Table B2: Proposed Thirty Year Operating Programmes

Programme	Budget (Revenue)	Timing
Landfill Management		
1425-Awapuni Closed Landfill - Waste Mixed Colour Glass Stockpile Processing	$47,000 per annum	2022/23 to 2033/34
Waste Minimisation		
974-City-wide - Rubbish & Recycling - Communication, Education and Resource Materials	$47,000 per annum	2021/22 to 2050/51
1723-City-wide - Rubbish & Recycling - RFID Platform and Data Management	$85,000 per annum $60,000 per annum	2021/22 and 2022/23 2023/24 to 2050/51
1724-City-wide - Diversion of Waste from Landfill - Investigation Studies	$125,000, $200,000 $75,000 per annum	2021/22 and 2022/23 2023/24 to 2050/51
1811-City-Wide - Annual Hazardous Waste Day	$50,000 per annum	2021/22 to 2050/51
1886-City-wide - Rubbish & Recycling - Resource Consent Application Renewals	$12,000, $98,000 $29,000, $25,000	2023/24, 2024/25 2027/28, 2028/29
1907-Waste Disposal Levy Funding from MFE	($255,000) ($340,000) per annum	2021/22 2022/23 to 2050/51
1908-City-Wide - Rubbish & Recycling - Asset Condition Assessments	$50,000 per annum $30,000 per annum	2021/22 to 2023/24 2024/25 to 2050/51
1909-Waste Minimisation Levy - Contestable Fund	$40,000 per annum	2021/22 to 2050/51

Table B3: Proposed Capital Budgets ['000s]

Year	Capital Renewal Programmes [9]	Depreciation	Capital New Programmes [10]
2021/22	**$375**	$923	**$753**
2022/23	**$418**	$955	**$399**
2023/24	**$407**	$981	**$7,639**
2024/25	**$779**	$1,002	**$7,895**
2025/26	**$753**	$1,058	**$1,766**
2026/27	**$558**	$1,124	**$197**
2027/28	**$864**	$1,152	**$6,742**
2028/29	**$685**	$521	**$167**
2029/30	**$847**	$557	**$247**
2030/31	**$1,417**	$602	**$162**
2031/32	**$902**	$657	**$440**
2032/33	**$1,035**	$713	**$140**
2033/34	**$577**	$752	**$140**
2034/35	**$515**	$782	**$140**
2035/36	**$1,306**	$805	**$140**
2036/37	**$1,563**	$824	**$133**
2037/38	**$525**	$833	**$133**
2038/39	**$590**	$841	**$133**
2039/40	**$937**	$851	**$133**
2040/41	**$653**	$857	**$128**
2041/42	**$533**	$863	**$125**
2042/43	**$641**	$859	**$125**
2043/44	**$673**	$853	**$125**
2044/45	**$989**	$849	**$125**
2045/46	**$1,189**	$837	**$125**
2046/47	**$847**	$819	**$124**
2047/48	**$1,010**	$814	**$124**
2048/49	**$837**	$819	**$124**
2049/50	**$947**	$834	**$119**
2050/51	**$947**	$834	**$119**

[9] See Table B4 below for details of Capital Renewal Programmes

[10] See Table B5 below for details of Capital New Programmes

Table B4: Proposed Thirty Year Capital Renewal Programmes [000]

Programme	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28 Onwards
Landfill Management							
185-Closed Landfills and Transfer Stations - Site Renewals	$35	$35	$35	$330	$55	$35	$35 to $670 per annum
Waste Management							
1368-City-wide - Public Space Rubbish & Recycling Bins Renewals	$45	$45	$45	$45	$45	$45	$45 to $125 per annum
Waste Management							
612-Recycling - City-wide Wheelie Bin and Crate Renewals	$78	$116	$153	$199	$240	$274	$181 to $717 per annum
649-Recycling - Materials Recovery Facility Renewals	$130	$135	$85	$118	$85	$135	$51 to $600 per annum
1374-City-wide - Recycling Drop Off Facilities - Renewals	$9	$9	$11	$9	$20	$11	$9 to $20 per annum
1721-Composting Activity Site Renewals	$8	$8	$8	$8	$258	$8	$8 to $308 per annum
1784-Resource Recovery Buildings - Renewals	$70	$70	$70	$70	$50	$50	$0 to $400 per annum

Table B5: Proposed Thirty Year Capital New Programmes [000]

Programme	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28 Onwards
Growth							
657-Recycling - City-wide Wheelie Bins and Crates for Residential Growth Areas	$68	$68	$68	$68	$68	$69	$69 decreasing to $54 per in 2050/51
1105-Awapuni Closed Landfill - Weighbridge and Ancillary Infrastructure Development					$350		$575 2027/28 $80 2029/30
1373-City-wide - Recycling Drop Off Facilities - Development	$35	$35		$1,000	$1,000		-
1783-Resource Recovery Buildings - New Facilities	$300						-
Compliance and Environmental							
721-Awapuni Closed Landfill - Landscaping Development	$18	$18	$18	$18	$18	$18	$18 per annum to 2030/31
727-Recycling - Materials Recovery Facility Development							$6,000 2027/28 $300 2031/32
Level of Service							
506-City-wide - Public Space Rubbish & Recycling Bins Development	$64	$64	$64	$64	$50	$50	$50 per annum to 2050/51
1410-Recycling - City-wide Recycling Services to Non-Residential Properties Development	$40	$40	$40	$30	$30	$30	$30 decreasing to $15 per in 2050/51
1810-City-wide - Diversion of Waste from Landfill - New Materials Development	$70		$250		$190		-
1910-City-Wide - Kerbside Food Waste Collection and Processing Service Development			$7,150	$6,586			-
Financial							
1371-Closed Landfills and Transfer Stations - Site Development	$159	$175	$50	$130	$60	$30	-

C. Resource Consents

Table C1: Summary of Resource Consents

Consent No.	Term [Yr]	Expiry Date	Type	Consent Subtype	Location	Description
105346 & 105405	23	1/07/2033	Discharge Permit	Discharge to Land	Ashhurst Closed Landfill	To discharge leachate and stormwater into land where it may enter water from the closed unlined Ashhurst landfill.
ATH-2006011460.01	12	19/07/2031	Discharge Permit	Discharge to Air	Awapuni Closed Landfill Flare	Discharge of contaminants to air at Awapuni landfill (backup landfill gas flaring operation).
3962 - 3967	35	1/02/2029	Water Permit	Divert	Awapuni Closed Landfill	Awapuni closed landfill suite - various discharge permits.
105458 & 105459	18	1/02/2029	Discharge Permit	Discharge to Land	Awapuni Composting	Compost operation.

Addendum – Resource Recovery Asset Management Plan

The proposed budgets contained within the body of the Resource Recovery Asset Management Plan were set at 27 September 2020.

Several changes have been made to these proposed budgets through the 10-Year Plan process.

The 10-Year Plan was adopted by the Council on 7 July 2021 in accordance with the Local Government Act 2002.

The following provides a high-level summary of these changes including commentary on the implications, risks or opportunities of these changes.

Operations and Maintenance

Figure A shows the proposed and adopted Operations and Maintenance budgets for the Activity.

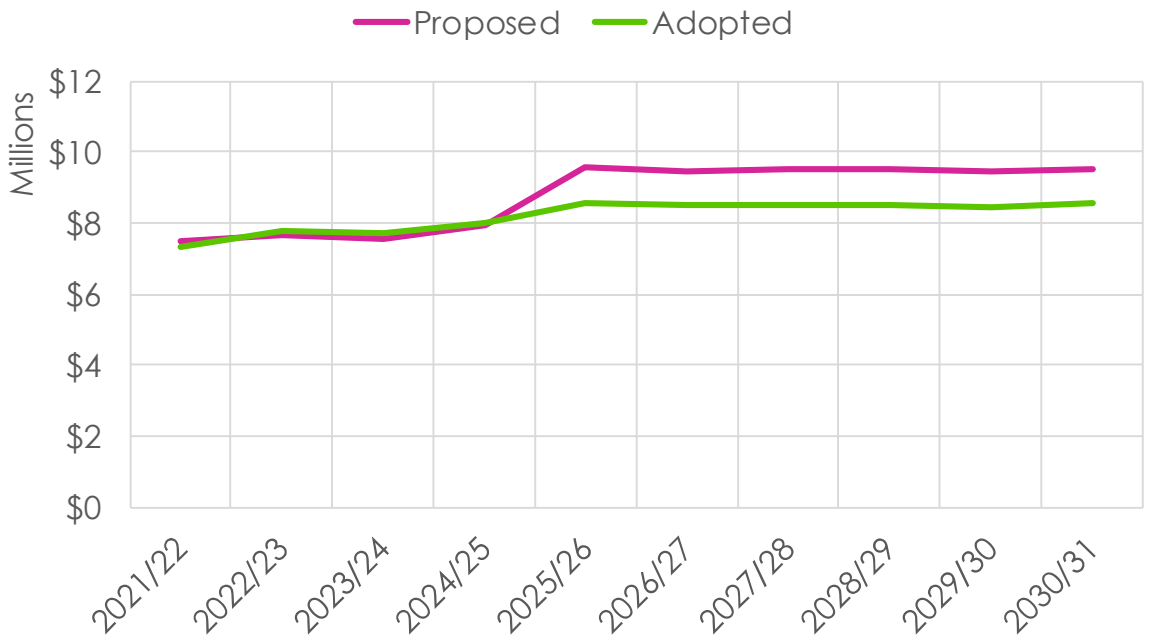


Figure A: Comparison of Operations and Maintenance Budgets

Table A contains a high-level summary of the changes to Operational programmes, alongside the implications, risks and opportunities due to the change in budgets.

Table A: Summary of Changes to Operational Programmes and Impact

Programme Name	Change	Implication/Risk/Opportunity
1723-City-wide - Rubbish & Recycling - RFID Platform and Data Management	Not Adopted	Will make reporting progress towards target set in the Waste Management and Minimisation Plan 2019 (WMMP) harder to report on (increased resources required to gather and collate data). Continuation of current practice of manual data entry and multiple data locations (spreadsheets) for data associated with the Waste Management Activity. May not realise the full benefits of the RFID Programme.
1811-City-Wide - Bi-Annual Hazardous Waste Day	Reduced	Frequency of event is better matched with forecast demand for service (likely to be lower than current levels due to residents having utilised the service.
2044-City-Wide - Kerbside Food Waste - Investigations and Trial	Introduced	Opportunity to achieve waste diversion target set in the Waste Management and Minimisation Plan 2019 (informs action C03).
2063-Waste Minimisation Education	Introduced	Increased likelihood of achieving waste diversion target through behaviour change.

Renewal

Figure B shows the proposed and adopted Capital Renewal budgets for the Activity.

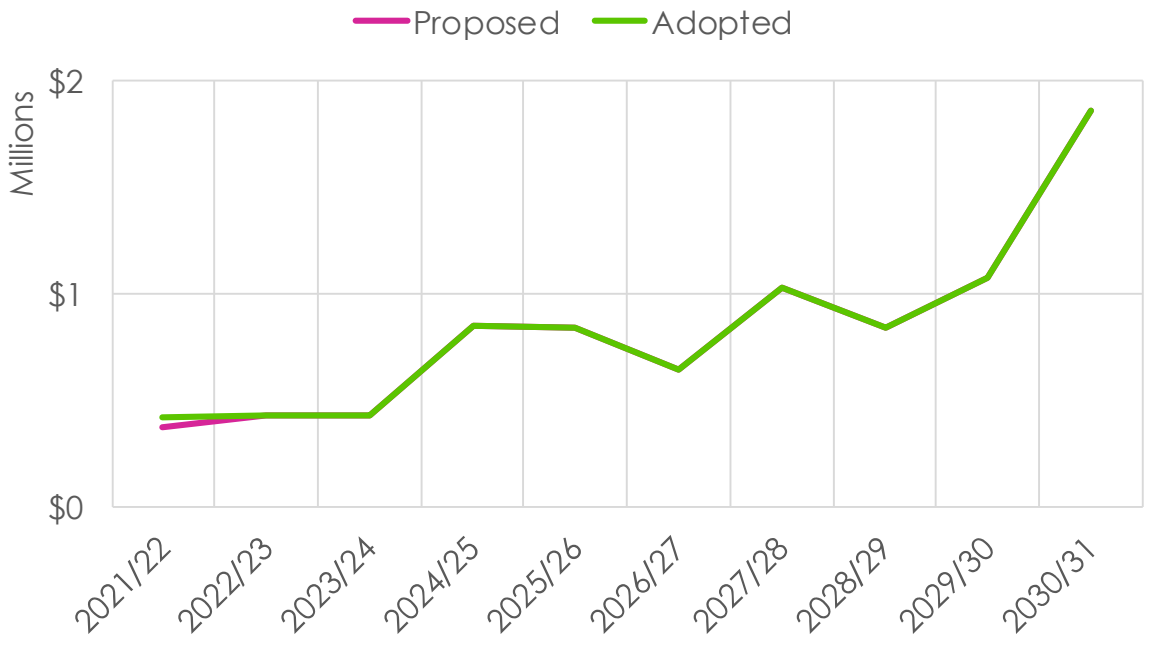


Figure B: Comparison of Capital Renewal Budgets

Table B contains a high-level summary of the changes to Capital Renewal programmes, alongside the implications, risks and opportunities due to the change in budgets.

Table B: Summary of Changes to Capital Renewal Programmes and Impact

Programme Name	Change	Implication/Risk/Opportunity
649-Recycling - Materials Recovery Facility Renewals	Increased	Reduced maintenance costs.

Capital New Expenditure

Figure C shows the proposed and adopted Capital New budgets for the Activity.

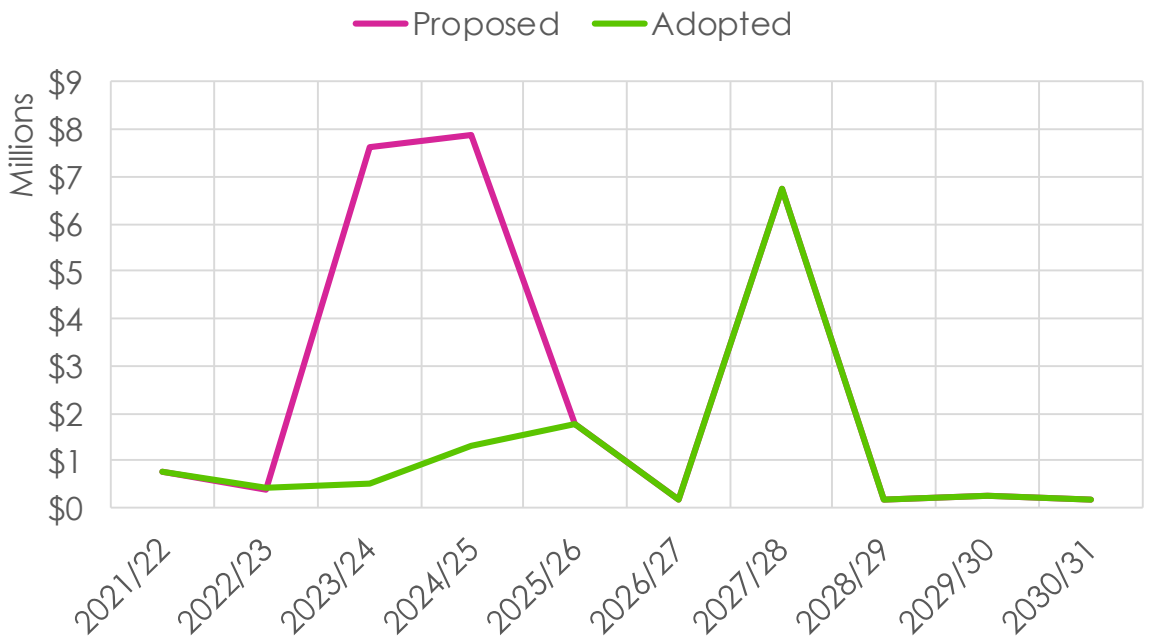


Figure C: Comparison of Capital New Budgets

Table C contains a high-level summary of the changes to Capital New programmes, alongside the implications, risks and opportunities due to the change in budgets.

Table C: Summary of Changes to Capital Renewal Programmes and Impact

Programme Name	Change	Implication/Risk/Opportunity
1373-City-wide - Recycling Drop Off Facilities - Development	Increased	Opportunity to make service more accessible and convenient to customers.
1910-City-Wide - Kerbside Food Waste Collection and Processing Service Development	Not Adopted	Difficult to meet waste diversion target set in the Waste Management and Minimisation Plan 2019.
657-Urban Growth - Recycling - City-wide Wheelie Bins and Crates	Increased	Increased alignment with growth assumptions.
721-Awapuni Closed Landfill - Landscaping Development	Increased	Increased amenity for neighbours, including future shared path users.

Te Kaunihera o Papaioea
Palmerston North City Council

pncc.govt.nz / info@pncc.govt.nz / 06 356 8199