Asset Management Plan
Solid waste

2024

GREAT LAKE TAUPŌ
Taupō District Council

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Project Asset Management Planning

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SOLID WASTE SUMMARY

Taupō District Council manages solid waste to reduce the likelihood of harm to people and the environment. This asset management plan enables Council to manage and demonstrate its stewardship of solid waste assets on behalf of its communities to provide services cost-effectively, both now and into the future while protecting public Health.

Strategy

The Waste Management and Minimisation Plan (WMMP) provides the strategic direction for the delivery of waste services and assets. The WMMP is supported by the Waste Assessment document which looks at the overall waste service delivery and draws on current policy direction provided by Government while incorporating local requirements and conditions.

These two documents determine what the overarching issues are for Solid Waste.
Waste Management & Minimisation Plan Target Council has set a waste reduction target for the district: *By 2034, increase the quantity of material (tonnes) diverted from landfill from 51% to 60%"*

The production of waste is directly linked to GDP, so Council has limited control over waste to landfill tonnages. A large percentage of the current waste to landfill is controlled by the commercial market service provision, which results in Councils target reflecting where council can have influence which is over the waste diversion initiatives provided in the district to achieve this goal.

Central Government will also have an impact on waste reduction with the price to dispose of waste set to increase due to both the waste levy and the ETS. The higher the disposal price the more opportunity there is to divert waste. The provision of food waste collection at Kerbside and the diversion of more C&D waste will if implemented get Council close to achieving its waste reduction target.

Overarching Issues for Solid Waste

Kerbside service delivery / contract renewal

The Kerbside Refuse and Recycling collection contract is up for renewal, with the current collection methodology now not being best practice. Nationally Local authorities are moving to a wheelie bin-based service which is supported by central government's aim to have a consistent standardised service delivery across the country.

A wheeled bin service will reduce the amount of health and safety incidences from sharps and lifting of crates and bags as well as reduce the amount of windblown litter that occurs with the current crate-based service. To reduce the amount of methane produced from the disposal of food in landfill, a food collection service at kerbside will also be considered.

Community support will be considered through consultation on the LTP and the WMMP.

Broadlands RD Landfill consent renewal

The operational consent to operate the landfill expires in 2027, but the implications of the ETS costs on operations means that Council when considering mitigation options to reduce exposure to the ETS need to consider the consent timelines.
An investment into emission reductions will need consent certainty, thus staff have started compiling data to start the consent renewal process. If council can obtain a new

consent, then Council can invest in emission reduction infrastructure knowing that it has a timeline to depreciate any new infrastructure.

If Council can renew the consent, the NES (National Environmental Standards) will require council to install gas destruction infrastructure as the landfill will receive more than 1 million tonnes over its lifetime.

If Council is unable to obtain a new consent, then council will need to alter the current footprint of the drop off area (transfer station) to facilitate bulk loading of material to an alternative disposal site. Any new transfers station facility will be designed to enable loads to be inspected and material recovered/ recycled/ diverted prior to transport to disposal.

ETS emission costs / gas flare
Emission credits need to be surrendered for every tonne of waste deposed to landfill. To reduce council's exposure to the ETS, a gas flare and gas wells could be installed at the landfill to burn the methane produced.

Emission costs are calculated on tonnage to landfill over a year, multiplied by an emission factor (currently 1.02) emission credits must then be purchased to cover this liability.

Current annual tonnage = 29405 x emission factor 1.02 = 29,993 tonnes. Emission credits are currently selling at estimated $70+. So, 29,993 x $70 = $2,09 mil per annum. These numbers are estimated as the cost of emission credits vary with market demand.

Diversion of C&D waste
There are two opportunities to divert C&D waste to landfill. The first option is to reduce this waste at source, so when the building is being constructed or deconstructed, provide diversion options at the building site (commercially driven solutions).

Council has undertaken a number of workshops, working with the construction industry to try and divert more material from on site, this work will continue as a focus for Council.

The second opportunity is when material is taken to the landfill for disposal. With an upgrade to the transfer station to enable additional sorting, trucks can be diverted to a tipping area where the loads can then be sorted and reusable materials diverted.

To enable the second opportunity, council, with assistance of government funding needs to upgrade the transfer station at Broadlands road to enable more diversion and room for stockpiling before materials before they are moved to market.

Currently there are 7000 tonnes of C&D waste being disposed, it currently unknown the % that might be able to be diverted. Any reduction of waste tonnage would be a bonus if Council was required to transport waste to alternative disposal facility, in the eventuality that a new consent was not obtained for the landfill.

Support for food rescue in the district
With the cost of food increasing due to a number of factors, it is timely that Council support and promote food rescue in the district. This achieves a reduction in waste to landfill as well as supports members of the community that are need of support. The initial work will entail an investigation into the current service delivery and an identification how council can support this practise in the district to be more successful. Funding support would be provided by Councils share of the waste levy funds.

Support for community repair
Council supports initiatives which encourage reuse and repair of items to prevent them from going to landfill. This may include Repair Cafés and Co-ops, which are free meeting places where staff or volunteers with specialist repair skills can assist or teach visitors with broken items. This creates opportunities for people from different cultures and generations to meet, learn, share skills and build relationships, as well as keeping products in use longer before disposal at a landfill.

Single use items such as coffee cups
Single use coffee cups and other single-use takeaway packaging make up a large portion of the contamination in our street recycling bins and also a large proportion of the waste volume in our street litter bins. Single use coffee cups are designed to be used only once and then landfilled. Some coffee cup producers suggest that their cups are compostable, but currently the ability to process them is very limited. Coffee cups have a plastic sleeve under the cardboard outer shell which makes composting difficult.

There are a number of successful reusable coffee cup programs operating throughout NZ and council should and investigate and support the local industry to implement a program in our district.

The focus will not only be on coffee cups but a range of single use products that end up in landfill.

Solid Waste Bylaw review
Waste collection operators are licenced under the Bylaw with this provision requiring licence holders to report waste tonnages as well as adhere to regulations that set days and areas of collection, to avoid multiple trucks on different days of the week.
The bylaw currently regulates the types and sizes of bins that can be used for domestic collections. This part of the regulation will need to be reviewed to enable any new kerbside collection service.

If the wheeled bin service is to be implemented Council will not service all properties due there need for additional services such as Motels and Hotels. Council could look to introduce the requirement for un-serviced properties to have a Waste Plan that identifies how waste will be handled by their business / property.

Asset data
Council provides a landfill and resource recovery centre, transfer stations, and street litter and recycling bins for its communities. The facilities, listed in order of size, are located as follows:

- Broadlands's Rd landfill and resource recovery centre / transfer station - the hub of Council's solid waste operations
- Turangi transfer station
- Mangakino transfer station
- Kinloch transfer station
- Omori transfer station
- Whareroa transfer station
- Closed landfills at Taupō, Mangakino and Turangi. Closed landfills have closure consents, which require Council to monitor to ensure there, are no adverse environmental effects from these sites.
- 500 litter and recycling bins, 55 Big Belly solar waste compactors.

Collectively the solid waste assets are valued at $2.77 million (Nov 2023)

Council provides solid waste primarily for public health, safety, and environmental protection. Waste services also enable the district to retain its attractive appearance for residents and visitors. Council provides a level of service that meets all these measures:

- refuse disposal and recycling / recovery services are available throughout the district
- kerbside refuse and recycling collection is provided in urban areas
- facilities are safe for current and future users
- Council encourages waste minimisation
- Street litter & Recycling bins do not overflow
- The landfill is operated within its consent requirements

State of the assets

CONSENTS
The Broadlands Rd landfill operational consent expires in 2027. As there is additional space on site to extend the landfill after the expiry date, Council will look to renew the operational consent.

If Council is able to renew the operating consent, then the requirements of the National Environmental Standards (NES) require that the Landfill operates gas destruction infrastructure, in this case this would be a gas flare.

Council holds three closed landfill consents, which cover, Stage 1 Broadlands Rd, Turangi and Mangakino closed landfills.

PHYSICAL ASSETS
Overall, the solid waste assets are in good condition and provide the desired level of service, with improvements made recently to the Turangi and Omori RTS sites. Works are planned to upgrade other facilities.

Forecast

Council's growth model projects that waste tonnages will be less than an additional 200 tonnes per annum to the landfill which can easily be processed at the landfill, with the limited increase not impacting landfill cell development. This is projected growth is to occur in the Taupō area with a majority of the new development in and around the Taupō Township.

Lifecycle Management Tactics

NEW WORKS
The Broadlands Rd transfer station power transformer is currently under sized resulting in power outages at the site. This is set to be upgraded in year 1 of the LTP.
A new waste compactor bin for bulk haulage of waste from Mangakino and Turangi will also be constructed, providing more flexibility for the Haulage contractor.

At the Turangi transfer station an extension to the recycling storage shed roof will enable the storage of more sorted material to be kept out of the rain prior to be taken to market.

The Whareroa and Managkino Transfer station also require some upgrade work to make sure that they are enable further waste diversion into the future. This will be in the form of glass bays and other diverted material storage capability. The focus will be around the reduction of manual handling of recovered materials to reduce the health and safety risk as well as making it easier for the community to use.

Council will continue to invest in smart technology Big Belly compaction bins to provide capacity in high usage areas where they can provide a better service level.
Kerbside service delivery

Kerbside waste & recycling service delivery is also going to be considered with a raft of options prepared for council and ultimately the community to consider. If Council is to roll out the standard kerbside collection service promoted by central government, then council will need to purchase wheelie bins for refuse and wheelie bins for recycling as well as a food cadie, with this set of assets supplied to each urban property plus specific business locations. Council has applied to the waste levy fund to support the cost of the food caddies.

RENEWAL
Council replaces assets when performance is unacceptable, based on criteria of: age, condition, service breaks and complaint volumes as well as health and safety impacts.

OPERATIONS AND MAINTENANCE
A preventive maintenance programme to optimise the life of assets and reduce renewal costs is undertaken and is based around weekly inspections and monthly feedback from on-site contractors as part of the monthly contract reports.

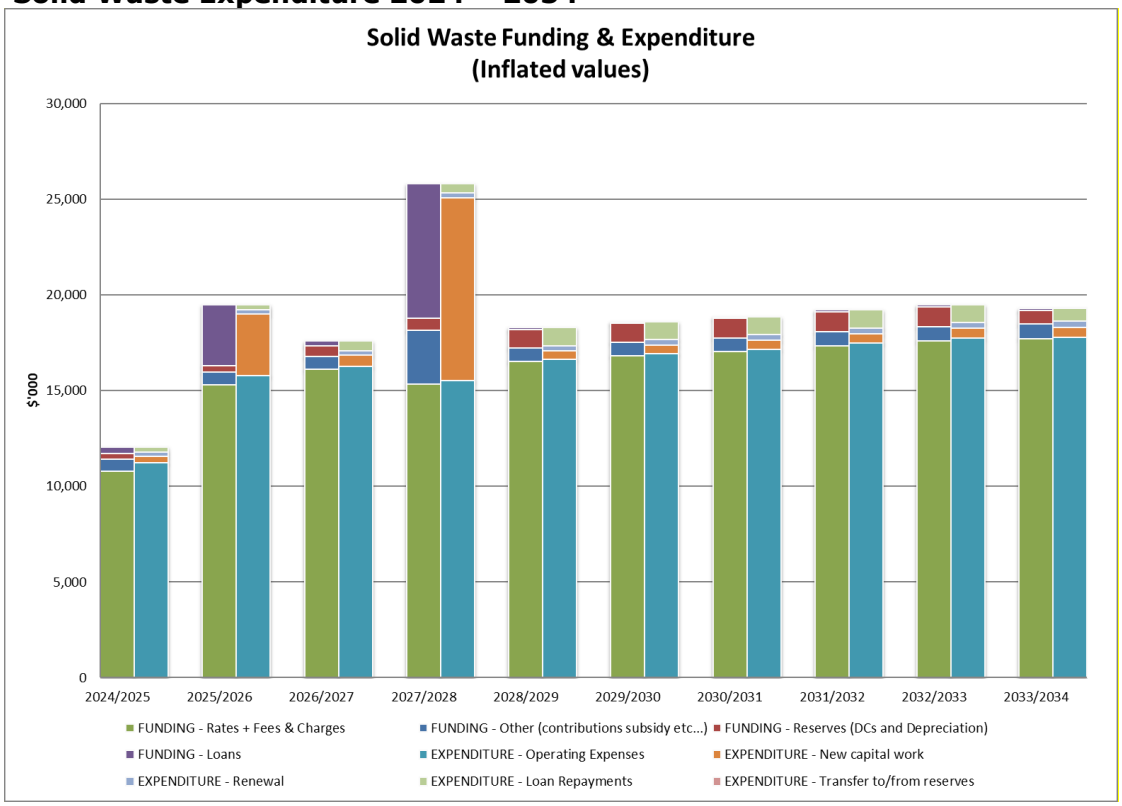
DISPOSAL ACTION
The Mangakino closed landfill is privately owned and operated as a farm. With the landowner's agreement, Council has obtained a resource consent that allows Council to rehabilitate the site if any adverse environmental impacts were detected through the monitoring program.
A portion of Stage one of the Broadlands Road Landfill is to be handed over to the Tauhara Mountain Trust, where Council will retain the obligations under the closure consent but will pass ownership of the land to the Trust with a number of operating conditions.

DISPOSAL
The steel green 60L street litter bins have reached their disposal date and will be progressively updated and removed and as they are steel, they will be recycled once removed.

Financials

The ten-year financial forecast for solid waste assets and services was determined by evaluating current maintenance and renewal plans for each set of components (pavements, sheds, barrier arms, etc), and identification of new works.

Solid Waste Expenditure 2024 – 2034



NEW WORKS
Capital expenditure spikes are due to new lined disposal cells being constructed at the Broadlands Rd landfill and the provision of a gas flare in year 4 and an upgrade at the Broadlands to enable the diversion of C&D waste.

Renewal
Renewal costs vary due to disposal sites needing differing amounts of funding due to size, usage and the age and performance of the plant. As facility usage increases due to increases in population and visitors, so will the renewal funding requirements. The average renewal expenditure is budgeted at around $100,000 per year. If a new bin program is rolled out for the kerbside collection then bin renewals will average around $300K per annum.

Operations and maintenance
Operation and maintenance costs are budgeted at $16 million per year for the next ten years. This is an increase from previous years due to an increase in ETS costs, ETS costs have moved to around $70-$80 per tonne of waste disposed to landfill and the new wheelie bin program. Council will have a Waste Services Contract (10 Years) that incorporates the Kerbside servie and the transfer station operations.

Changes Post Consultation
Changes to this AMP will be made once the public consultation process and council deliberation process have been finalised.

Technical Notes

RISK MANAGEMENT
Risk management is essential for management of Council assets so that solid waste services can be provided safely and consistently. Using a likelihood and consequence matrix to assess risks, the following high risks have been identified:

- Fire at the landfill / Gas flare failure

- Tomos - Damage to the reticulation system due to pipe fracture, disconnection of joints and/or pump failure , Damage to liner system
- External contractor failure, leading to range of other failures (for example, liner failure, failure to meet consent conditions)
- Liner failure, causing leachate to flow to ground, due to maintenance and capacity issues
- Failure to comply with resource consents, including acceptance of hazardous materials or illegal disposal of contaminants into landfill
- Unexpectedly high costs to maintain, renew or create assets, leading to failure to comply with resource consents
- Competition - Commercial operators divert waste, limiting Councils waste minimisation opportunities, and reducing revenue.
- Public safety due to access to contaminated sites, and recycling areas that are hazardous, heavy machinery movements.
- Volcanic eruption – facilities being covered with ash would hinder there operation, ash would affect operational vehicles and could affect kerbside collection operations.

All of these risks have potentially serious consequences for people in the district and for the District's economic wellbeing because they jeopardise the District's reputation and potentially, its visitor industry.

ASSET MANAGEMENT PRACTICES
Council uses a range of decision-making tools to establish its maintenance, renewal and new works expenditure, including process, analysis and evaluation techniques for life cycle asset management; information systems to store and manipulate data; and data and information from a number of sources (technical, financial, customer service). Asset management practises for waste facilities are highly dependent of facility use and peak demand requirements.

PLAN IMPROVEMENT PROGRAMME
Councils are required to have plan improvement programmes to improve their asset management planning, and we will continue to implement our improvement plan.

INTERNATIONAL INFRASTRUCTURE MANAGEMENT
The plan is an intermediate plan based on the requirements of the International Infrastructure Management Manual.

1.0 INTRODUCTION

2.0 Background

3.0 ASSET MANAGEMENT POLICY

PURPOSE
The Asset Management Policy supports Council's long term strategic goals found in the 2024 LTP of:

- Ensure that the Taupo District remains a great place to live
- Promote economic development
- Protect our water resources and use them wisely
- Maintain the quality infrastructure that we have
- Keep rates and debt affordable

OBJECTIVE
The objective of Council's Asset Management Policy is to:

- ensure service delivery is optimized to deliver agreed community outcomes and levels of service for both residents, visitors and the environment
- optimise expenditure over the life cycle of the assets
- risks are managed appropriately
- provide a service delivery that is sustainable

PRINCIPLES
The following principles will be used by Council to guide asset management planning and decision making:

- effective consultation to determine appropriate levels of service
- Integration of asset management within Council's strategic, tactical and operational planning frameworks including corporate, financial, and business planning
- Informed decision making using a lifecycle and risk management and inter-generational approach
- Transparent and accountable asset management decision making
- Sustainable management of assets for present and future needs

CORPORATE FRAMEWORK
This Asset Management Policy links to Council's LTP, Infrastructure and Financial Strategy and Asset Management Plans. It builds on Council's strategic goals by promoting an integrated approach to the management of service delivery and across all asset classes.

STRUCTURED ASSESSMENT of ASSET MANAGEMENT PRACTICE
Council has undertaken a structured assessment of the appropriate level of asset management practice for each of the asset classes. This structured assessment follows the guidelines provided in Section 2.1.3 of the International Infrastructure Manual (IIMM 2011v4).

4.0 PURPOSE OF THE PLAN

Taupō District Council is responsible for managing a range of community owned assets such as the Solid Waste assets and services. To ensure assets and services are managed in an efficient and affordable way, asset management plans are required.

The size of the Solid Waste investment and importance of Solid Waste services to the community demands excellence in the management of these assets these as assets are essential to the community to maintain public health. The community expects the Solid Waste Assets and Services are to be managed in such a way that costs are minimised while providing the levels of service the community desires.

The overall purpose of asset management (AM) planning is:

"To meet a required level of service in the most cost-effective way (through the creation, operation, maintenance, renewal and disposal of assets) to provide for existing and future customers".

This asset management plan (AMP) is the tool for combining management, financial, engineering, and technical practices to ensure that the level of service required by customers is provided at the lowest long-term cost to the community. The plan is intended to demonstrate that Council is managing the assets responsibly and that customers will be regularly consulted over the price/quality trade-offs resulting from alternative levels of service.

AMPs are therefore concerned with outlining optimal life cycle management strategies and providing details of the associated costs. This identification of future needs, management options and cash flows provide the ability to even out peak funding demands and account for asset depreciation loss of service potential.

The main benefits derived from AM planning are:

- Improved understanding of service level options and standards.
- Minimum lifecycle (long term) costs are identified for an agreed level of service.
- Better understanding and forecasting of asset related management options and costs.
- Managed risk of asset failure.
- Improved decision making based on costs and benefits of alternatives.
- Clear justification of forward works programmes and funding requirements.
- Improved accountability over the use of public resources.
- Improved customer satisfaction and organisational image.
- A fundamental objective throughout the preparation (and future review) of this plan will be to identify potential opportunities for reductions in asset lifecycle costs.

This Asset Management Plan has been updated internally by the Environmental Impacts Manager building on the existing 2021 AMP document. Data has been collated and updated by Council's maintenance engineers using the asset data system and recent asset valuation data. Contributions for this plan have also been made from relevant asset managers/engineering officers within Infrastructure Services and financial updates via the Management Accountants.

5.0 LEGISLATIVE REQUIREMENTS FOR ASSET MANAGEMENT PLANNING

The recent focus on AM planning, results from the Local Government Amendment Act December 2014. This Act places an emphasis on strategic financial planning and requires local authorities to:

Prepare and adopt a Ten-Year Plan (TYP) with a 10-year planning horizon every three years, taking into account asset creation, realisation, and loss of asset service potential.
In determining their long-term financial strategy, consider all relevant information and assess the cost/benefit of options.

Manage assets prudently, in the interests of the district and its inhabitants and ratepayers.
Clearly identify significant forecasting assumptions and risks underlying financial estimates.
Identify any significant negative effects that any activity within the group of activities may have on the social, economic, environmental, or cultural well being of the local community.

The preparation and implementation of an AMP from which long-term financial strategies will be developed, is a means of TDC complying with these requirements.

Section 10 Purpose of Local Government

(1) The purpose of local government is-
   a) To enable democratic local decision-making and action by, and on behalf of, communities; and
   b) To meet current and future needs of communities for good-quality local infrastructure, local public services, and performance of regulatory functions in a way that is most cost-effective for households and businesses.

(2) In this Act, good-quality, in relation to local infrastructure, local public services, and performance of regulatory functions, means infrastructure, services, and performance that are-
   a) Efficient; and
   b) Effective; and
   c) Appropriate to present and anticipated future circumstances.

6.0 LEGISLATIVE DOCUMENTS

There is a variety of legislation affecting Council's responsibilities with respect to Solid Waste management. In some cases, the legislation sets the standards required for the provision of Solid Waste service delivery.

Legislation / Bylaw / Policy	Key Areas of Application
Waste Minimisation Act 2008 Act to be reviewed in 2025	This legislation sets out the responsibilities of territorial authorities in relation to waste management and minimisation. And sets a levy cost per tonne that must be paid to the government. (Moving to $60 per ton from July 2024). The Act also give power to the Govt to put in place product stewardship schemes for things such as Tyres, E-waste, beverage containers, farm plastics, and batteries, all of which are in planning phase currently.

Legislation / Bylaw / Policy	Key Areas of Application
	Govt are flagging that the Waste Act may be reviewed in the short term. Container deposit legislation will impact on what will be collected from the Kerb as well as the value of those commodities.
Local Government Act 2002 (LGA) and Amendments	The LGA requires: Council to periodically assess the provision of Solid Waste services in the district (Water and Sanitary Services Assessment). The planning and community consultation for future demand and consequential health and environmental impacts of Solid Waste discharges. Councils can set Bylaws to license waste activities to ensure that there is no harm to the environment from Solid Waste practices. Section 17A(1) A local authority must review the cost effectiveness of current arrangements for meeting the needs of communities within its district or region for good-quality local infrastructure, local public services, and performance of regulatory functions. Under Section 17A(4) you must consider as minimum. -Method of delivery: • In house • Council CCO • Multi party CCO • Another local authority • Another person or agency -Method of governance and funding • Council • Joint committee or shared service A 17A review of waste services will be undertaken between 21-23 as council considers kerbside refuse and recycling collection options
Resource Management Act 1991 (RMA)	Requires Councils to: ▪ sustain the potential of natural and physical resources to meet the reasonably foreseeable needs of future generation ▪ comply with District and Regional Plans ▪ avoid, remedy, or mitigate any adverse effect on the environment ▪ consider 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 The RMA establishes the functions of territorial authorities in relationship to the management of and effects of the use of land, subdivision, hazardous substances management and the management of natural hazards as matters relevant to solid Waste management. The District Council also acts as an asset manager and undertakes works that require compliance with the RMA. Council must comply fully with the requirements of the Act, particularly in relationship to the discharge of waste to ground, Leachate to ground and discharges to air.
Regional Policy Statement (RPS) – Environment Waikato	The current Regional policy statement supports regional facilitation of waste minimisation projects within the district.

Legislation / Bylaw / Policy	Key Areas of Application
Health and Safety at Work Act 2015	Responsibilities with respect to Solid Waste management include evaluating the hazards and assessing the levels of risk associated with Council assets and places of work, and taking all practicable steps to either (in this order) eliminate, isolate or minimise the hazard (s8, s9 and s10). Council needs to assess what level of risk it feels is appropriate, and what measures it considers as practicable for hazard mitigation in the context of the Act. Council has responsibilities under the HASIEA not only as a Principal (owner of Solid Waste assets and property), and Employer (of staff), but also in respect of its engagement of contractors (including consultants) and as a person in control of a place of work (a statutory concept from which Council cannot escape by contracting out)
Emissions trading (climate change legislation) 2020	Requires waste disposal sites to purchase emission credits based on tonnes of waste disposed to landfill. With cost of credits increasing over time, Council is considering the cost impact relative to cost of a gas flare.
Hazardous Substances and New Organisms Act 1996	Places requirements on what can be accepted to landfill and what training is required to handle materials.
Litter Act	Enables Councils to place fines for littering (currently being reviewed by Govt)
Health Act 1956	sets minimum service standards to protect public health
Climate Change Response Act 2002	Requires Councils to consider emissions and consider the opportunities to reduce emissions when planning for new infrastructure and services
NES	Requires a landfill that take more than 1 million tonnes of waste to have gas destruction
Basel Convention	Is placing rules around what products can be exported overseas, such as mixed plastic, which then impact the recovered materials market.

Table 1.2 - Legislative Documents

7.0 WASTE MANAGEMENT & MINIMISATION PLAN

The Waste Minimisation Act 2008 requires that all local authorities have a Waste Management and Minimisation Plan.

This Document will adopted in alongside the LTP 2024 and will include a waste diversion target of, "*By 2035 increase the quantity of material (tonnes) diverted from landfill from 51% to 60%*" and the document highlights the main issues as:

- Landfill consenting and planning if a consent is not obtained
- Kerbside service delivery to reflect national standardised service and best practise
- Investigate construction and demolition at source and at RTS sites
- Investigate and support community Reuse and repair workshops and events
- Investigate and support community-based food rescue programs in the district
- Single use Coffee cups and other single use products
- Review Solid Waste Bylaw

The waste assessment undertaken as part of the development of the WMMP identified that Council was providing adequate service provision for handling recycling and for the disposing of refuse in the district and is protecting public health.

The Waste minimisation Act 2008, section 50.1 b requires that territorial authorities must review their Waste Management and Minimisation Plans at intervals not more than 6 years after the last review.

The date for the next review of this plan will be 2030.

8.0 RELATIONSHIP WITH PLANNING AND STRATEGIC DOCUMENTS

The way in which AM planning links the Strategic planning process with operations and annual plans is illustrated below.

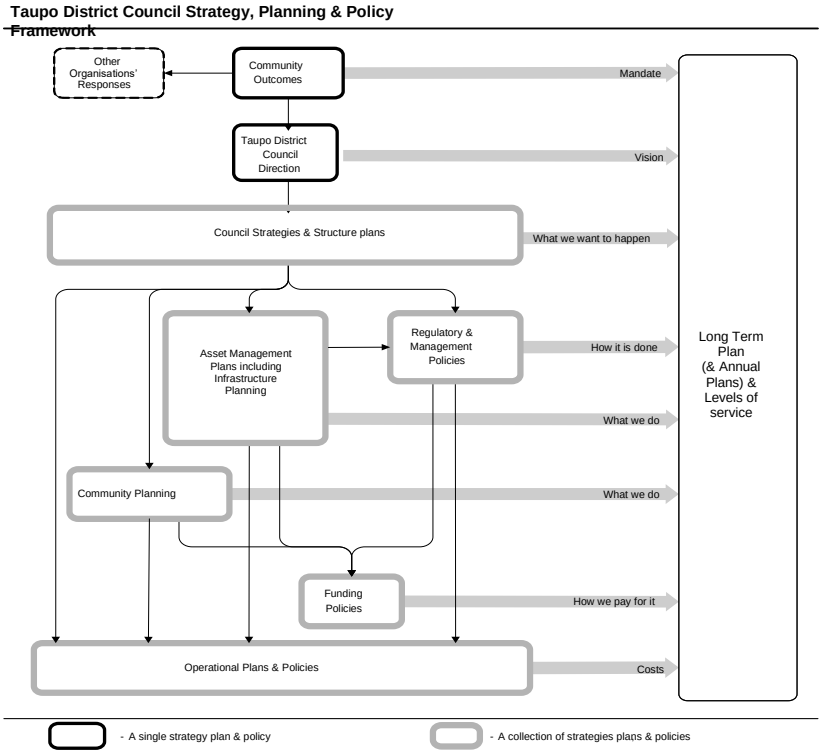


Figure 1.1: Council Planning

AMP's are tactical plans for achieving strategies resulting from the strategic planning process. AMP's are a key component of the council planning process linking with the following documents.

TYP: TYP sets the strategic direction for the Council and is the overarching planning tool which describes the activities the Council will undertake to deliver. It identifies the outcomes the community would like to achieve. It also contains the financial forecast for the next 10 years. This financial forecast is drawn from the AMP.

Annual Plan: This sets out how Council will undertake its strategic goals and details the specific activities, functions for the first three years of the LTP. The works identified in the AMP should automatically become the basis on which future LTP's and annual plans are prepared.

District Plan: The District plan is an implementation tool used to protect values and outcomes important to the community.

Legislation: The AMP must comply with all relevant legislation and provide the means of meeting legislative requirements, there has recently been new legislation introduced through the "Waste Minimisation Act 2008", this legislation comes with a raft of regulatory requirements.

Bylaws, standards and policies: These tools for asset creation and subsequent management are needed to support AM tactics.

Environment Waikato Regional Policy Statement Solid Waste: These references give the policy framework and give effect to the preferred strategic direction and a vision of what kind of Assets and services the region wants, a set of desired outcomes the region wants to achieve and a specific direction to focus the region's efforts in meeting these objectives.

Waste Management & Minimisation Plan: This plan is the guiding document in regard to the future provision of Assets and services for the Solid Waste function. The Waste Minimisation Act requires that this document is reviewed every 6 years.

Infrastructure Strategy: As required by the amendment to the local government Act, the Infrastructure strategy provides a thirty-year overarching strategy for the provision of infrastructure within the district.

Growth Management Strategy 2050: At the core of Taupō District 2050 are 12 Strategic directions. These provide the framework of interrelated policies that guide decision making and growth-related issues.

Structure Plans: Adopted and proposed structure plans outline how growth is to be managed within areas - Taupō Urban Structure Plan (TUSP), Taupō Town Centre Structure Plan (TTCSP), Kinloch Community Structure Plan (KCSP), Mapara Valley Structure Plan, Turangi and Southern lakeshore Settlements Structure Plan and the (CISP) Commercial and Industrial structure plan.

Contracts: The service levels, strategies and information requirements contained in AMPs are translated into contract specifications and reporting requirements.

9.0 Key Stakeholders

This AMP recognises the following as key stakeholders:

A stakeholder is any person or group having an **interest in the service** provided by the asset. The stakeholders in this AMP are divided into internal and external stakeholders and are shown in Table below.

Stakeholders - External & National stakeholders	Stakeholders main interest	Engagement Methods/Touch points
Audit New Zealand	Legislative responsibilities as defined in Legislation.	As per audit processes.
Local Government New Zealand/Central Government	To ensure Local Government Act is complied with (via Auditor-General). Enhance value of decision-making process.	Occasional correspondence

Ministry for the Environment	Waste levy payment and spend Best practise service delivery Product stewardship development	Monthly reporting Included in focus groups
Ministry of Health	Safety of workers in the industry That public health is being protected	Occasional correspondence Submissions if required Input into waste assessment
Wasteminz	Undertake national performance measurement Assist lobbying Best practise	Regional and national collaboration
Global recycling markets	Value of recovered materials	Monthly to understand the implications for different recycled materials

Stakeholders – External and Regional	Stakeholders main interest	Engagement Methods
Bay of Plenty District Health Board (includes Lake District Board area)	Sanitary assessments	Survey of service provision
Neighbouring Councils – Waikato & Hawkes Bay	Information sharing and best practise coordination of regional and national programs	Ongoing contact with waste staff looking at best practise
Waikato Regional Council	consenting and monitoring Regional collaboration	Ongoing contact with relevant staff. Regular contact
Local Iwi and Hapu	Overall waste program	Face to face meetings, provision of reports, Consultation

Stakeholders – External and Local	Stakeholders main interest	Engagement Methods
Taupo District Council ratepayers, residents, customers and visitors	Recognised as large & significant stakeholders. Reliable Waste network services at an affordable cost that have minimal environmental effects on environment.	Broad methods such as phone, service requests, general correspondence, email, meetings, face book, social media, face to face, meetings (informal) service requests.
Consultants and Contractors	Commercial opportunities Project development Maintenance contracts Project designs	Formal and informal meetings Occasional correspondence Short term agreements

		Offer of service.
Emergency services	Waste disposal options and routing Fire prevention and support	Contact with civil defence. Training activities
Local contractors	Service provision	Day to day contact
Stakeholders – Internal	Stakeholders main interest	Engagement Methods
Asset Managers	Implementation of infrastructure and service management activities (eg operations, demand management, maintenance, construction). Effective decision making, finance, communications, IT etc	Continual discussion via informal meetings, face to face, regular asset manager meetings.
Infrastructure Asset Management	Operation of Asset Data function for waste services	Day to day collaboration
Chief Executive	Compliance with regulations, service reliability, quality and economy	Updates when required
Communication team	Project updates, event updates	Councillor weekly update, communication plans, emails, phone, meetings etc
Community engagement team	Litter collection/ clean-up	Informal meetings, phone, email
Contract Managers	Responsible for implementation of infrastructure and service management activities	Continual discussion via informal meetings, face to face
Council committees	As per delegated authority	Regular meetings Review of service delivery

Stakeholders – Internal continued.	Stakeholders main interest	Engagement Methods
Customer services	Customer service request systems which minimise and resolve	Broad methods such as phone, service requests, general correspondence,

	complaints/enquiries relating to the activity.	email, meetings, Facebook, social media, face to face, meetings (informal).
Elected members	Owner of assets, responsible for sustaining service levels under the LGA 2000.	Councillor weekly updates, regular meetings, email, occasional correspondence Work with Environmental portfolio members.
Financial team	Budget requirements (income and expenditure) including forecasting, annual plan, Long term planning	Spreadsheets updated regularly, phone, email, meetings, Council reporting.
Infrastructure team and manager	Input into the AMP/Activity plan, AMP policy development and Infrastructure 30-year policy	Regular meetings, open plan office discussions
Parks & Reserves team	Litter bin maintenance and illegal dumping clean-up	Regular meetings
Planners & Policy team	AMP support for Long term plans, infrastructure support for current/future district activities	Regular meetings

Table 1.3 Stakeholders

1.2.1 Large or significant Users

There are two large commercial waste companies that bring the bulk of the commercial waste to the Broadlands Rd landfill, these being Envirowaste Services and Waste Management. Both companies currently compete with council in the kerbside waste collection market, and both offer additional waste collection over and above the Council service.

Council is aware of the potential for waste flight so keeps the disposal price at a level which maintains the revenue stream to the landfill. (risk identified in Risk section)

There is also a benefit to the community to have these additional waste related services as this is the commercial sectors core business to provide. Council can also price incentivise diversion to assist if possible.

Council is reviewing Kerbside refuse and recycling collection service and Council may choose to rate fund the service delivery going forward. This would have a major impact on these two operators regarding sustaining a kerbside collection service through a user pays platform.

The intention for the kerbside service delivery is to provide a standard set service, (small changes for CBD vs Residential) where commercial operators that require additional service can go to the commercial market to obtain these services. For example, Council would provide a glass crate for recycling, but a restaurant would require a skip, so they then go to the market to hire the skip. Council will be looking

for the commercial market to provide commercial volume food collection as well, as Council will only be providing a household capacity service to the CBD.

10.0 Purpose of Ownership

Uncontrolled waste and litter have the potential to cause significant damage to property and the environment, as well as threaten the safety of sections of the community at risk. TDC has historically developed and taken ownership of Solid Waste assets to help meet the economic, safety, environmental and health outcomes desired by the community.

The Waste Minimisation Act 2008, section 42 states:
A territorial authority must promote effective and efficient waste management and minimisation within its district.

Section 43 of the Act outlines what must be considered when Councils adopt their waste plan, inclusive of collection, recovery, recycling, treatment, and disposal services.

Central government have now also mandated the products that must be collected from kerbside for all communities over 1000 People.

These being:

- Glass
- Paper /cardboard
- Plastic's number 1, 2, and 5
- Tin can and aluminum cans

Central government have done this so that there will be consistency between district regarding collection materials and familiarity for the public when moving locations.

The purpose of solid waste assets is to provide a sustainable, safe, convenient, and cost-effective solid waste system for the disposal and handling of refuse and recyclables throughout the district to ensure public health.

By local authorities retaining control of disposal sites such as landfills and transfer stations, as well as collection services and education provision, Councils can continue to directly influence waste streams and take advantage of waste minimisation opportunities and ensure public health.

Some Council's in NZ have lost control of their local waste streams and are no longer able to influence how waste minimisation programs are implemented. Diversion of material is now solely dependent on the cost of the service compared to landfill disposal with services provided with user pays, giving the community the ability to opt out.

Currently Council has control over the disposal of waste in the district as the price to dispose of waste at Broadlands Rd is such that it would be uneconomic to collect and haul waste to alternatives sites. Council must continue to be aware of market forces and disposal costs to ensure that competition for waste does not undermine Council's revenue streams and intern service delivery.

A fully rate funded kerbside collection service will not have a driver of cost to support diversion but will rely on the size of the bins and the collection frequency to drive behaviour.

If Council is unable to obtain a consent to operate the Broadlands Rd landfill, Council will have to negotiate a disposal gate price for waste disposed of at an out of district waste facility. This will result in additional transport costs to this alternative facility as well as an undetermined disposal rate, meaning that the price to dispose of waste will increase, impacting families in the district.

For the new Kerbside service, the intention is to go a to rate funded service as the modelling suggests that Council can provide an overall cheaper service to the community than a mix of different contractors in a user pays market.

Section 17A Review

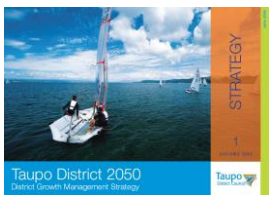
Due to the two significant operational contracts coming up to their expiry dates, Council has undertaken a section 17A review which supported continuing contracted out services with the option to bundle a mix of services from 2025.

11.0 LINKS OR ORGANISATIONS VISION, MISSION, OBJECTIVES, GOALS
"The Solid Waste AMP aims to meet the following Community Outcomes.
Economy – our communities prosper in a thriving local economy with a diverse range of rewarding employment opportunities.
Environment - A shared responsibility for places we are proud of.
Engagement - Council is connected with its communities, advocating for their social and cultural well-being.

Community Outcomes are considered when determining life cycle strategies, levels of service, etc.

Council's response to the Community Outcomes acknowledged that managing growth is one of the biggest issues for TDC over the next 10 years, and in June 2006 published TD2050.

TD2050 provides a policy framework to guide where and how future growth should occur and identifies a series of actions to achieve this desired pattern of urban growth. At the core of TD2050 are the 12 Strategic Directions. These provide the framework of interrelated policies that guide decision making on growth related issues. Over time they will be achieved by putting into effect identified policies and undertaking the specific actions identified in TD2050.



The Strategic Directions, policies and actions out of TD2050 that are specifically relevant to the Stormwater activity are:

Strong Communities - Strategic Direction 5:

- Identify and plan for social and community infrastructure needs in advance of development (Policy 5.2).

Sustainable Economy – Strategic Direction 7:

- Ensure that economic activities reflect the need to preserve the natural environment that sustains the district's economy (Policy 7.1).

Integrating Land Use, Infrastructure & Funding – Strategic Direction 8:

- Manage the sequence of development in growth areas so that services are available from inception of new or expanding communities (Policy 8.1).

Leadership, Partnership and Collaboration – Strategic Direction 12

- Develop collaborative working relationships with other key stakeholders to achieve effective implementation (Policy 12.1)

Action – A 8.2
Include agreed growth assumptions in all Asset Management Plans.

Action – A 8.3
Ensure Asset Management Plans support the patterns of development defined by TD2050 are aligned with the LTCCP, proposed District Plan and funding policies.

The objectives of this AMP are to:

- Demonstrate responsible stewardship of solid waste assets by TDC on behalf of its customers and stakeholders
- Act as a vehicle for communication with all parties with an interest in TDC asset management planning practices
- Provide detailed financial information and forecasts based on best available information and manage environmental and financial risk of any asset failure.
- Set out the minimum legislative and health requirements to be met by the assets
- Identify issues, weaknesses, and deficiencies in asset management data, systems and processes relating to solid waste
- Provide a structural framework on which subsequent versions of the plan can be developed
- Provide detailed improvement tasks to improve the confidence in the outputs and quality of the asset information.
- Manage the assets in terms with the amendments to the local government Act.

Reduction in the volume of waste to Landfill can be achieved by:

Reduction	"making less rubbish"
Reuse	"using products in their existing form for their original purpose or a similar purpose"
Recycling	"reprocessing waste materials to produce new products"
Recovery	"extraction of materials or energy from waste for further use or processing"
Treatment	"subjecting the waste to any physical, biological or chemical process to change the volume or character of that waste so that it may be disposed of with no or reduced significant adverse effect on the environment"
Disposal	"final deposit of waste on land set apart for that purpose"

TDC has already identified several important requirements, performance measures and targets for its solid waste assets. These have been included in the following documents:
Long Term Council Community Plan (LTP) 2024 – 2034, Waste Management and Minimisation Plan 2024, TDC District Plan, Annual Plan and other Council documents including 'Vibrant and Sustainable Taupō Report and the TDC Economic Development Strategy', TDC Infrastructure strategy.

12.0 ASSET MANAGEMENT'S CONTRIBUTION TO CORPORATE OBJECTIVES
Council's goal, as set out in the LTP relating to Solid Waste Assets and Services is:

To protect and safeguard the Taupō District environment by ensuring refuse is managed and disposed of in a safe, efficient and sustainable manner that maintains natural and aesthetic values.

13.0 Assumptions

14.0 FINANCIAL
The following financial assumptions have been made. Further information can be found in the TYP document.

Assumption	Potential risk	Mitigation measure
Asset Revaluations completed June 2023 have been used as the basis for asset values.	Time between AMP completion and last revaluation	Council undertakes an annual price variance assumption report
1. Investment Returns eventuate as predicted.	Not the required funds to undertake capital works	Councils LTP and annual plan spend can be adjusted annually to meet Councils revenue and finance policy
2. Interest Rate on borrowings remains as predicted within the financial model.	Not the required funds to undertake capital works	Councils LTP and annual plan spend can be adjusted annually to meet Councils revenue and finance policy
Expenditure of capital projects occurs and estimated debt levels are as predicted	Potential under performance in capital spend reflected in Council revenue	Councils LTP and annual plan spend can be adjusted annually to meet Councils revenue and finance policy
3. No allowance has been made for inflation adjustment within this AMP. The source of funds for the future	Under funding of cost centre	Finance team make allowances for GST in funding plan and policy

Assumption	Potential risk	Mitigation measure
replacement of significant assets is stated in the revenue and Financing Policy.		
4. The useful lives of significant assets are as per the accounting policies documented in the TYP. Depreciation is charged at 50% for the first year and 100% in subsequent years.	Asset lives have been incorrectly calculated meaning a funding shortfall	Council has asset depreciation checked externally. Asset lives are compared to the latest asset information nationally
5. Levels of service and funding has been based on historic data	The community desires change to level of service which are not reflected in this document.	Council undertakes three yearly satisfaction surveys. Council undertakes pre LTP consolation to gauge the community for different service level needs. Council undertakes consolation with the community as part of the development of this LTP document
6. Allowance has been made for vested assets	The level of allowance for vested assets is incorrect.	Councils LTP and annual plan spend can be adjusted annually to meet Councils revenue and finance policy
9. Assume that the revenue received from Rates is as per expected.	A shortfall in rates funding	Councils LTP and annual plan spend can be adjusted annually to meet Councils revenue and finance policy
10. Assume revenue from recovered materials stays the same	An increase in unbudgeted operational cost	Councils LTP and annual plan spend can be adjusted annually to meet Councils revenue and finance policy.
The current cost of ETS credits remain at current levels	ETS cost change requiring additional funding through gate charges and or rates	Council does have the ability to increase gate charges to cover increases in operational costs at district facilities

Assumption	Potential risk	Mitigation measure
		or install a gas flare to reduce emission exposure
Kerbside and facility operators don't agree to role-over clauses in current operational contracts.	Increase in operational costs of service provision	Council does have the ability to increase gate charges to cover increases in operational costs at district facilities and bag prices at Kerbside
Council decides to provide kerbside services funded by rates to remove the ability for the commercial market to undermine service delivery	An increase in rates that may be politically unpalatable	Need to provide elected members with comprehensive understanding of market drivers and reasons for a funding recommendation
Product stewardship programs reduce councils funding requirements for service delivery	Programs are not implemented	Council does have the ability to increase gate charges and rate charges to cover increases in operational costs at district facilities and bag prices at Kerbside
The current landfill operational consent expires in 2027, it is assumed that a new operational consent to operate the site after this time will be granted	The consent is not granted, requiring upgrading of the site to enable bulk loading of material to a landfill out of the district	Costs of retrofitting the Broadlands Rd site have been included in the AMP, as well as the cost of transport and disposal of waste to another facility. Negotiations regarding extending the site are ongoing

- NON FINANCIAL

Assumption	Potential risk	Mitigation measure
1. Assume that growth is going to occur as per the Growth Model predictions.	Changes in growth will impact capital and operational spending	Councils LTP and annual plan spend can be adjusted annually to meet Councils revenue and finance policy
2. The Broadlands Rd operational consent requirements will remain	Changes to disposal requirements through the resource consent will	Councils LTP and annual plan spend can be adjusted annually to

Assumption	Potential risk	Mitigation measure
constant.	require an increase in operational and capital expenditure	meet Councils revenue and finance policy. Operational contracts can be updated to reflect consent conditions
3. Contractors will be available for development and construction of projects.	A shortage on contractors for project completion will mean an increase in project cost	Council can extend tender periods to enable contractors more time to schedule in works.
4. There will be continued growth in public participation in the democratic process and Council will need to respond to this growth.	Increased growth in participation could result in changes in levels of service delivery.	Councils LTP and annual plan spend can be adjusted annually to meet Councils revenue and finance policy
5. There will be no unforeseen legislative changes or central government policy changes that will affect this asset.	Changes in legislation could impact on the funding levels	Changes in legislation have an implementation period to enable Councils to plan.
6. Economic and labour market constraints may have a direct effect on recruitment.	If Council is unable to recruit to the required level to complete the works program for the year this could have impact on Councils credibility	Council may have to hire consultants to provide support; this could increase the cost of service delivery which will need to be funded through the annual plan process.
7. That Councils resource consents for its activities will be renewed as required.	The renewal of resource consents will depend on Councils prior performance in meeting the conditions of the existing consent and any changes in legislation Also the views of local iwi regarding the location of the landfill next to mount Tauhara	Council works closely with the Regional council to achieve consent compliance. Compliance is also a staff performance criterion, so Council is focused on consent compliance and it is considered that any consent related issues can be resolved. Council will look to transport waste out of the district if no consent is obtained

Assumption	Potential risk	Mitigation measure
There are ongoing markets for recovered materials	Recovered materials markets collapse meaning current collected materials go to landfill. Changes to collection contracts and public unhappiness	Collection contracts would need to be renegotiated. And consultation with the community around recovered materials would need to be undertaken.
Covid -19 impacts	A reduction in staff numbers reduces the ability to provide services	If this is extreme then Council may have to reduce service levels

15.0 Significant Negative Effects to Providing the Solid Waste Service

In general, providing Solid Waste services to the community has both public health and environmental benefits.

There is however negative effects in providing this service, these include;

- The cost of providing the service on rate payers, especially smaller communities. (cost would still apply if provided by commercial services providers).
- The cost of keeping up with ever increasing environmental standards requiring significant capital investment. (Gas flare, ETS costs)
- The potential for commercial competitors undermining the financial structure thus viability of the service provision
- Potential negative environmental outcomes from owning a landfill or providing collection services.
- Transport emissions from waste collection vehicles
- Mitigating Measures
- By Council staying in the provision of waste services, Council can continue to influence the price charged to the community and thus keep waste disposal affordable.
- Cost of adhering to changes to environmental services would still need to be passed on to the consumer whether the service was provided by Council or the commercial market, with Council provided service Council can chose the payment option, rates or user charges.
- In a Pandemic situation Council can play a leadership role in making sure services cater for essential needs.
- Council funds the cost centre partially through gate charges and partially through rates so that the cost of the service delivery is spread through to non-resident rate payers and by partial rate funding, thus Council reduces the opportunities for commercial competition.
- The landfill has been engineered to incorporate a three-layer liner system to prevent harmful leachate escaping and entering the ground water. Regular inspections are also undertaken to monitor for leachate springs or breakouts.

The refuse collection contractor is required to cover all loads that are not collected in compaction vehicles to prevent spillage of materials.

- Council is investigating the viability of flaring the methane produced from the site to limit Councils ETS exposure, Council would have to pay for residual ETS exposure to dispose of waste at an alternative disposal site. The provision of gas infrastructure will be dependant on a consent renewal

16.0 Asset Management Plan Complexity

17.0 OUTLINE OF APPROACH

Basic asset management functions are those which produce an AMP based on providing current levels of service and meet minimum legislative requirements by supporting a long term (10 year plus) cash flow forecast and accounting for changes in the service potential of assets. Basic AMPs define existing levels of service and identify costs based on renewal accounting principles.

Advanced AMP's identify processes to optimise lifecycle AM strategies and provide a greater degree of confidence in the resulting cash flow predictions. Advanced AM functions include predictive modelling, risk management, optimised renewal decision making (ORDM) and service level reviews.

The Solid Waste Asset Management Plan 2024 follows the IIMM framework and it has been developed and collated internally by the Environmental Impacts Manager. It is considered that this iteration of the Solid Waste Asset Management Plan reflects a "intermediate" level of development.

The development of this Amp considers the requirements of the amended Local Government Act.

1.6.1.1 AMP REVIEW BY COUNCIL

The involvement by councillors, including the reviewing and approving of the AMPs is briefly outlined below:

Workshops are held with the council for group of activities including AMPs which gives them following information:

- What we do
- Key issues
- The service(s) we provide
- Levels of service, performance measures and targets
- Key projects over the next three years
- Who pays
- Fees and charges
- Financials
- Capital expenditure (including renewals)
- Operating expenditure
- Draft AMPs are provided to councillors to view
- Council finally adopts the AMP

18.0 LIMITATIONS OF THIS AMP

As it currently stands, this AM Plan has limitations in the following areas:

- Asset data for the Solid Waste assets needs to be incorporated into the Asset Finda database to allow for more robust renewal planning.

19.0 Organisational Structure

Taupō District Council has a flat organisational structure and is structured in order to deliver the key strategic directions of the long-term Plan.

Solid Waste service provision is provided by the Infrastructure Services Group.

Asset Management Planning is undertaken by the Environmental Impacts Manager, who is also responsible for updating the Solid Waste Asset Management Plan and Resource Consent requirements and this position reports to the Infrastructure Manager. Asset management planning is undertaken as part of the asset management team made up of the Asset managers for Water and Wastewater, Storm Water, Solid Waste Transportation, Parks and Property.

Day to day Maintenance is undertaken by the contracts Engineer who is responsible for the administration of the solid waste contracts and reports to the Environmental Impacts Manager Capital works identified in the AMP are undertaken by the Asset Manager or Network engineer or passed on to the Special Projects team in cooperation with the Asset manager depending on work priorities.

These staff members are located on the same floor of the Council office building and work closely together to make sure that there is a coordinated approach to the provision of Solid Waste services throughout the district.

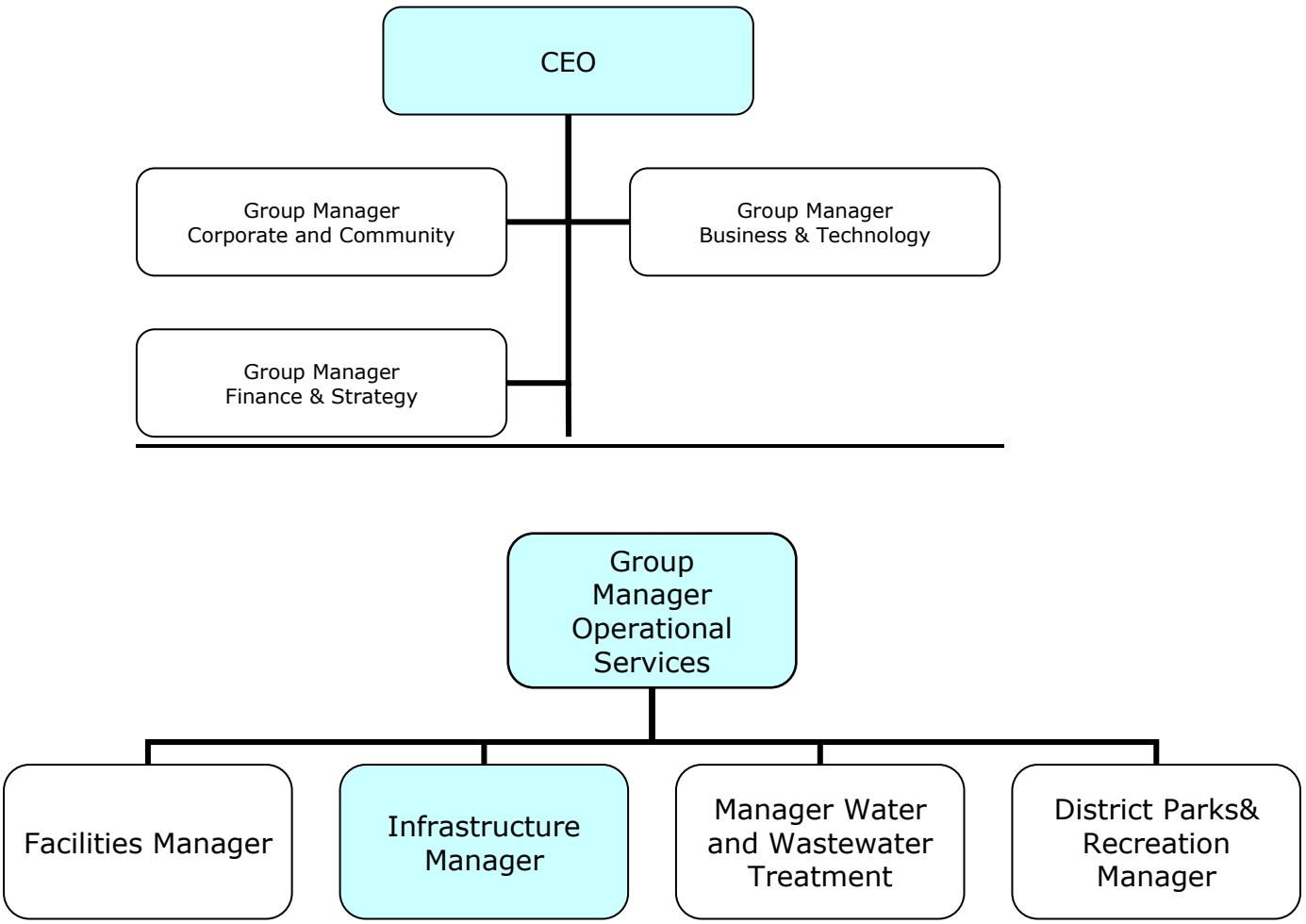
Consultants are employed to assist by providing professional services as necessary. The organisational structure of the Infrastructure Services Group is illustrated in the following figures.

In addition, the Solid Waste services activity is able to draw on the following in-house resources from the Corporate & Infrastructure Group:

- The Finance & Administration Team who is responsible for the development of the Asset Management System and Asset Management Plan financials; and
- The Environmental scientist for Resource consent support

The organisational structure is illustrated in the following figures.

TDC Management Structure



2.0 DEFINITIONS

Accredited Product Stewardship Scheme	An accredited product stewardship scheme is a scheme has been assessed against criteria in the Waste Minimisation Act and has been accredited by the Minister for the Environment under section 15 of the Act. Those running these schemes may apply to the Minister to have the scheme accredited.
As-built	Refers to a survey or drawing of the actual assets that have been constructed, recognising that they can sometimes vary from what was planned before work started on site. As-built drawings are needed to ensure that asset information systems contain data on the asset as it has been constructed, not how it was planned in theory.
Biosolids	Biosolids are a by-product of sewage collection and treatment processes, which can be beneficially reused as a soil conditioner.
Critical Assets	Those assets with a high consequence of failure. They are often found as part of a network, in which, for example, their failure would compromise the performance of the entire network. (Landfill)
Development Contributions	Funds paid, typically by developers, to local authorities to help with the cost of growth. These contributions are authorised by Part 8 of the Local Government Act 2002.
Diverted material	Diverted material means any thing that is no longer required for its original purpose and, but for commercial or other waste minimisation activities, would be disposed of or discarded.
Extended Producer Responsibility	Producer responsibility puts the onus on businesses to look for, and capitalise on, opportunities for resource conservation and pollution prevention throughout a product's life cycle.
Green Sword	Is the Policy China has made regarding the flow of recyclable materials into the country, and setting limits for contamination
Hazardous waste	Hazardous waste refers to materials that are flammable, explosive, oxidising, corrosive, toxic ecotoxic, radioactive or infectious. Examples include unused agricultural chemicals, solvents and cleaning fluids, medical waste and many industrial wastes.

Landfill	A landfill is an area used for the controlled disposal of solid waste.
Organic waste	Organic waste includes garden, kitchen waste, food process wastes, and sewage sludge.
Product Stewardship	Product stewardship requires producers, brand owners, importers, retailers, consumers and other parties to accept responsibility for the environmental effects of products – from the beginning of the production process through to, and including, disposal at the end of the product's life. It moves some responsibility for waste to those involved in the production and supply of the product, and indirectly to the consumer by ensuring any residual waste costs are reflected in the purchase price. It therefore provides incentives for better product design and other measures to reduce waste and resource costs.
RTS	Refuse Transfer Station, Taupō District Council has five RTS, located at Mangakino, Kinloch, Turangi, Kuratau and Whareroa.
Solid waste	Solid waste is all waste generated as a solid or converted to a solid for disposal. It includes wastes like paper, plastic, glass, metal, electronic goods, furnishings, garden and other organic wastes.
Special wastes	Special wastes are those wastes that cause particular problems at disposal and which may need special management to effectively recover material or ensure proper disposal. Examples of wastes include used oil, used tyres, end-of-life vehicles, batteries, end-of-life electronic goods and good with specific materials such as some plastics.
TDC	Taupō District Council.
Trade waste	Trade waste refers to liquid wastes generated by business and disposed of through the trade waste system. Trade waste includes a range of hazardous materials resulting from industrial and manufacturing processes.
User Pays	Places the cost of the service provision onto those that use the service i.e. one pays for the refuse sticker to place on the rubbish bag for it to be collected or having a gate charge at waste disposal sites.
Vested Assets	Assets that are transferred to a public entity at nominal or zero cost. Typically, this might result from a situation where a

	developer has installed assets as part of developing a site and passes them to a public entity to manage, maintain, and deliver services through. The fair value of these assets has to be determined as they are integrated into the organisation's asset information system so that they can be appropriately managed.
Waste Flight	Where waste moves from one Landfill or transfer station to another due to pricing incentives.
Waste hierarchy	The waste hierarchy orders preferred waste minimisation and management methods (listed in descending order of importance): ▪ reduction ▪ reuse ▪ recycling ▪ recovery ▪ treatment ▪ disposal.
Waste minimisation	Waste minimisation refers inclusively to the reduction of waste and the reuse, recycling of waste and diverted material.
Waste reduction	Means lessening waste generation, including by using products more efficiently or by redesigning products; and, in relation to a product, lessening waste generation in relation to the product.

3.0 ACRONYMS / ABBREVIATIONS

AM	Asset Manager
AMP	Asset Management Plan
AMS	Asset Management System
Audit	Audit New Zealand
CAPEX	Capital Expenditure
CCTV	Closed circuit television – common method of inspecting pipes
CEO	Chief Executive Officer
Council	Taupō District Council
CSA	Control Self Assessment (Risk Management)
DC	Development Contribution
ES	Environmental Services Group at Taupō District Council
GIS	Geographical Information System
GMS	Growth Management Strategy
IPG	Infrastructure and Parks Group at Taupō District Council
LDS	Land Disposal Site
LGA	Local Government Act
LoS	Level of Service
LTP	Long Term Plan (Council's ten year planning document formerly the Long Term Council Community Plan – LTP)
OPEX	Operational Expenditure
PRAMP	Property Asset Management Plan
RMA	Resource Management Act
RPS	Environment Waikato Regional Policy Statement
SAMP	Solid Waste Asset Management Plan
SLG	Senior Leadership Group (CEO, 2nd Tier Managers and

	selected 3rd Tier Managers)
SMP	Stormwater Management Plan
SWAMP	Stormwater Asset Management Plan
SWAP	Solid Waste analysis protocol
T24	Track 24
TDC	Taupō District Council
TRAMP	Transportation Asset Management Plan
WMMP	Waste Minimisation and Management Plan
WRC	Waikato Regional Council
WW	Wastewater
WWAMP	Wastewater Asset Management Plan
WWTP	Wastewater Treatment Plant

4.0 ASSET DATA

5.0 Asset Summary and Valuation

Councils Finance system has a list of Solid Waste assets which is used for valuation purposes, this list is site specific and can be manipulated to identify assets of greatest value. The value of assets is then considered as part of the maintenance and renewal strategy.

Objective holds current Valuation:

Council is currently compiling a more detailed data base of Solid Waste assets to store condition and performance data, and this is one of the improvement tasks. Currently age and value information are kept in the Finance system and maintenance and renewal expenditure is identified through on-site condition assessments.

The renewal program while planned, does have a reactionary component, due to the ongoing day to day use by the public and the need to make sure that facilities are operating safely and providing the desired service levels. This reactionary process is supported by contract reports and weekly site observations.

The data held can be manipulated down to facility level, so council can determine costs down to each transfer station.

The asset lives are also held and this information is utilised for valuation purposes. On site condition assessments of assets are undertaken to update asset life data.

Renewal expenditure is analysed along with onsite condition assessments to determine remaining useful life of assets.

Council has Asset Finda for the three waters data needs and to date only the Litter Bin asset data has been included. Solid Waste data is programmed to be included into this data base one the back log of three waters information has been uploaded.

	Solid Waste Facilities and Assets of TDC
Facilities	• Broadlands Road Landfill & Resource Recovery Centre • Broadlands Road Closed Landfill • Turangi closed landfill • Mangakino closed landfill (not Council owned) • Kinloch Transfer Station • Mangakino Transfer Station • Omori Transfer Station • Turangi Transfer Station • Whareroa Transfer Station • Street Litter & Recycling Bins • Big Belly Solar compaction bins
Assets within the Facilities	• Buildings • Plant • Equipment • Fencing and gates • Roading • Hard stand areas • Utilities • Wheelie bins

	• Landfill cells • Haulage Bins • Barrier arms • Weighbridges / program software • printers • Lighting • Pit barriers • Stormwater pipes • Leachate pipes, pump, telemetry

All recorded components have been valued in terms of their replacement and depreciated replacement value. The valuation process has been performed in accordance with generally accepting accounting standards (NZ IAS16 Property, Plant and Equipment) and with NZ local authority asset valuation practices (NZ Infrastructure Valuation and Depreciation Guidelines).
The basic approach has involved:

a) Preparation of the valuation databases from the various sources of information supplied by TDC.
b) Adjustment of asset quantities, materials and techniques to reflect an optimum (least cost) modern equivalent replacement that offers the same level of service as that currently provided.
c) Calculation of optimum replacement cost (ORC) by multiplying asset quantities by appropriate unit construction cost rates and including an allowance for other costs (site establishment, professional fees and financial charges).
d) Prediction and assignment of economic and remaining lives.
e) Calculation of Optimised Depreciated Replacement Costs (ODRC) by deducting an allowance for depreciation, taking into account age, remaining life and residual value.

6.0 Asset Component

7.0 WASTE DISPOSAL AND RECOVERY SITES

8.0 Description
Taupō District Council manages 5 Refuse Transfer Stations and the Broadlands Rd landfill.

Council also manage three closed landfills, at Broadlands Rd, at Turangi RTS site and on private land in Mangakino.

Council finance system holds assets data on all 6 refuse facilities and data can be disaggregated to reflect each location. The asset data is reviewed annually with condition surveys to determine future renewal and maintenance requirements.

Asset Finda holds the street litter and recycling bin data and can be componentise the data, it holds all maintenance and renewal data and can provide renewal dates based on a number of factors such as age, condition, and criticality.

9.0 Capacity/Performance

The performance of the refuse disposal and recovery sites is generally assessed via resource consent compliance, but also by their ability to handle daily refuse and recovery operations. An annual report is prepared for the Broadlands Rd Landfill as a requirement of the resource consent which also has a peer review requirement under the consent.

The Broadlands Rd Landfill is governed by an upper resource consent limit of refuse to be disposed of per year being 50,000 tonnes of refuse as measured over the weighbridge. The current annual refuse tonnage is in the vicinity of 30,000 tonnes. The operating consent for the site expires in 2027, but there is another approximately 20 years filling available, so negotiations are under way to determine consent conditions as well as consultation with the neighbours and Iwi.

The cost of infrastructure to flare gas within the time frame of the current operational consent which expires in 2027 is not cost effective, although Council would be able to reduce the impact of the landfill on the environment. The recommendation to council regarding the gas flare will be to renew the consent as soon as possible to make sure that any gas expenditure can be depreciated over a longer consent period. Currently the ETS legislation does not provide any financial compensation for gas flared after the site stops receiving waste.

If council is able to obtain a new operational consent, then there is other legislation (the NES) that imposes a condition, that if the site will take more than 1 million tonnes of waste then it must incorporate emission reductions in the form of a flare.

Council is considering the impact of that legislation, as the current capping material on the landfill makes the gas infrastructure less efficient which impacts the amount of emission costs long term. This issue must be considered when determining the future viability of the site compared to trucking waste to an alternative site.

If Council is unable to obtain a new consent, or the economics determine that it is cheaper to truck waste out of the district, which currently they suggest that operating the local site is the least costly option, then the site could be retrofitted to allow for bulk haulage of material to an alternative disposal site.

Capacity of the peripheral recovery operations at Broadlands Road is based around the ability to handle daily volumes of different materials. The landfill footprint does have some flexibility to store or move site operations to suit volumes. Operational contracts are set up to enable material volume flexibility.

Transfer station capacity and performance is based around the ability of the sites to handle daily refuse and recovery volumes. Refuse is being placed into transfer

skips so capacity for refuse at district sites can easily be adjusted by increasing the frequency of empties at the sites by the transfer truck.

With greater emphasis by the government on reducing emissions, it is timely to upgrade the Broadlands Rd Transfer station area to enable further diversion of materials with the focus on C&D waste. The size of the upgrade will have to cater for the sorting of skip bin waste and potentially transfer station loads. Additional space will need to be set aside to store sorted material before it is sent to market. The ability to reduce the waste stream further will also be a benefit if council is unable to obtain a new operating consent as the diversion will reduce the amount of material needing to be trucked and disposed at an alternative site.

The next phase of optimisation of the district facilities is to bring them all under one operational contract to take advantage of coordinated waste and recovered materials movements and a reduction overhead from multiple contacts, and this process is underway with a combined contract set to commence from 1 July 2025 for district facility operations and kerbside waste and recycling collection.

Council has recently made improvements to the Turangi RTS where the recycling disposal area has been upgraded and the site has moved to bulk loading of recyclables as materials slide down chutes into large skips, meaning fewer vehicle movements and the elimination of manual handling of recyclables.

The introduction of a weighbridge at Turangi has enabled better data gathering and a more transparent charging system based on load weight. The Turangi site utilises the same weighbridge operating software and hardware as the Broadlands Rd landfill.

Council varies the opening hours at district facilities to cater for the increase volumes over holiday periods and in the summer. Council incentivises recycling by making waste disposal user pays, and recycling rate funded (so perceived free) to enable the community to divert material from the waste stream.

If a bin program is selected to be rolled out for kerbside collections, then the service will be fortnightly, with a peak weekly service for a 9 week period over the summer to cater for the out of district home owners as well as the tourist numbers to the district.

Service requests are analysed to identify if maintenance issues are determining the need for future renewal or capex expenditure, contract reports provide details of works as well as preventative maintenance. Expenditure is then compared with renewal and condition assessments which then form planned expenditure and projects.

As the waste facilities cater for large numbers of public and commercial vehicle movements, and the sites operate in harsh environments due to refuse dust,

monthly site checks are undertaken to determine if maintenance or renewal is needed. Site contractors keep the Contracts Manager informed regarding maintenance requirements during the monthly contract meetings.

Central government have recently announced through a revamp of the NZ Waste Strategy, a list of mandated materials that councils must provide a kerbside collection to collect. This list comprises, plastic numbers 1, 2 and 5 as well as glass bottles and jars and paper and carboard. Services must be provided to all urban settlements with a population of 1000 an over. This service requirement forms the basis of the recycling collections proposed.

Health and Safety of staff and the public is also a major driver for asset renewals at the districts waste facilities. Monthly Health and safety meetings are held, and sites are analysed for compliance.

The three closed landfills are assessed against each site closure consent conditions which may require remedial works in certain circumstances.

The operational consent for the Broadlands Rd Landfill expires in 2027, so planning around remaining capacity at the site has been undertaken to guide cell development. By undertaking site surveys, it has been determined that there is an additional 20 years of landfill space available at the south of the site after the expiry of the consent.

Based on Cell 2D tender, the rough order development cost for the landfill south of 2D and 2C1 would be 6.8M (including 20% contingency). This equates to around $11.30/m3 of void. While the development cost is higher than the average from previous cells of around $6.20, it is still highly economic compared to the landfill charges or cost of transferring waste out of the district. Primarily the higher unit cost arises from the very large cut to waste required in the southern ridge, so any strategy that can use this material elsewhere will aid the overall economics.

The impact of gas infrastructure and the cost of ETS emissions will impact the above void space cost.

10.0 Condition

The condition of the Solid Waste facilities is assessed as required or at a minimum of every three years but in general terms condition of assets at facilities can be assessed on a monthly or even weekly basis as the network engineer and the Environmental Impacts Manager undertake regular site inspections during contract and site meetings. There is a certain level of reactive maintenance due the high public use and the need to keep the sites providing the required level of service as well as meeting Health and safety requirements.

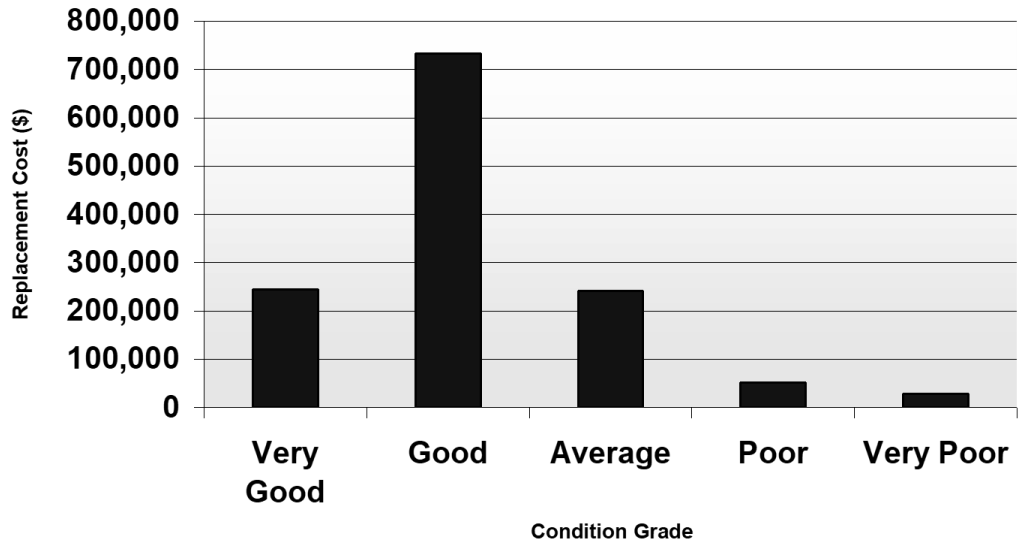
The condition of the Solid Waste assets relates to their ability to perform to their required levels of service. The assets are inspected to:

- Identify the individual elements as defined in the proposed National Guidelines.
- Determine the quantity of each element.
- Assign a condition grade to each element based on a visual condition assessment;
  Grade 1 = very good
  Grade 2 = good
  Grade 3 = average
  Grade 4 = poor
  Grade 5 = very poor
- Assign a remaining life to each assessed element.
- Determine a replacement cost for each element.

Results from the analysis show that the solid waste assets are generally in good condition. Approximately 75% of the elements are in very good or good condition. The remaining 25% are in average to poor condition.

Asset condition can change rapidly and seasonally due to the change in facility usage over the summer period. The landfill and RTS sites can suffer varying amounts of "Wear and tear" from use by the public and hence monthly condition assessments are undertaken. The weather can also play a significant part on Solid waste asset conditions.

Figure 2:1 need to look at where we got this graph and the detail



11.0 Asset Confidence Rating

The asset valuation assigns confidence ratings to the source data and unit cost rates and to other items as appropriate. The overall confidence rating for the Solid Waste Asset is **B.**

Grade	Label	Description	Accuracy
A	Accurate	Data based on reliable documents	±5%
B	Minor inaccuracies	Data based on some supporting documentation	±10%
C	Significant data estimated	Data based on local knowledge	±15%
D	All data estimated	Data based on best estimate of experienced person	±30%

Table 1: Key to Asset Confidence Rating

Attribute	Confidence Grade							
	D		C		B		A	
Asset data								
Physical properties								
Location								
Age								
Condition								
Performance								
Deterioration rate								
Financial data								
Opex								
Operation costs								
Maintenance costs								
Asset management costs								
Interest rates								
Depreciation								
Renewals								
Unit rates								
Project scope								
Cost estimates								
Capital works								
Demand forecast								
Project timing								
Project scope								
Project costs								
Project prioritisation								

Table 2: Summary of Asset Confidence Ratings

Quality Assurance Process for Asset Data

Assetfinda will be utilised for the storage of asset data for the Solid Waste cost centre once the Three Waters data update has been finalised.

Asset data will be recorded for each individual facility, landfill and RTS sites. The uploaded data will be compared with data stored in the finance data base currently with any differences confirmed in the field.

Ongoing site assessments undertaken by site operators and the Solid waste contracts manager and asset manager will continually upgrade condition data in Assetfinda.

Once Council upgrades Assetfinda to version four, Council will be able to undertake and make condition changes in the field using Assetfinda Mobile.

12.0 LEVELS OF SERVICE

13.0 Introduction

A key objective of this Asset Management (AM) plan is to match the level of service provided by the asset with the expectations of customers. This requires a clear understanding of customers' needs, expectations, and preferences. The levels of service defined in this section will be used:

- to inform customers of the proposed type and level of service to be offered
- to enable customers to assess suitability, affordability and equity of the services offered
- as a focus for the AM tactics proposed to deliver the required level of service
- to measure the effectiveness of this AM plan
- to identify the costs and benefits of the services offered

Service life Of Network and Services

The RTS sites throughout the district are not governed by resource consents but they along with the landfill operate in a commercial marketplace. The market could choose to operate similar facilities in the district and compete on price for the handling of waste related materials which may then have an impact on the service life of Councils waste facilities outside of the service life of the actual assets. The potential for the commercial market to compete with isolated transfer stations is however considered low due to the cost of set up compared to the low waste tonnage handled.

The Landfill does have the capacity on site to operate for longer than the current consent term which expires in 2027. Council is currently working on a consent renewal to provide certainty around the term that Council will operate the site. This then will determine if the requirement to have gas destruction in the form of a Flare will make the site cost effective to operate. The provision of a gas flare would also assist Council in reducing the cost of ETS emission credits.

It is estimated that there is opportunity to provide an additional 20 years of filling if the site was excavated appropriately and consent was obtained to do so. The Leachate pipe from the landfill to the sewer network is currently under sized and will need to be upgraded, but only if a new consent is obtained as Council is looking to work to the final contours for the landfill just in case a consent id not obtained.

Central government have consulted with local government regarding their Action and Investment Plan (AIP) which looks to use the increased funds from the waste levy to support fund waste minimisation investments. The fund is prioritising investment around the reduction of C&D waste. This funding opportunity fits with councils' intention to upgrade the Broadlands Rd transfer station to enable more C&D waste diversion. This upgrade could involve a trommel and sorting bays and sort line, to mechanically sift through and sort materials. Council will look to work with central govt to make sure that end markets are developed for any diverted materials. Councils investment is looking to be around the $4.2 mil mark with the possibility of central govt funding half the cost.

Council is looking to gain efficiencies by combining a number of the solid waste operational contracts. To enable council to combine these contracts council has had to enter into two short term contracts of two years terms for both the southern and northern transfer station operations. This will allow both the facility contracts and a new

kerbside contract to be combined to enable efficiency gains and provide an overall contract that will attract more interest from the waste industry providers.

As every tonne of waste transported out of the district will come at an additional cost council will need to focus on reducing and recycling as much of the material as possible. Both options of consent renewal and trucking waste out of the district will have projects developed. The option in this space is the development of a new landfill somewhere in the district.

A business case including all options have been developed, with the new landfill options being less preferred, due to council not owning the waste stream and reflecting on the situation in Eltham where the Taranaki councils invested in developing a new landfill but it is now moth balled due to the waste industry signalling that they were taking waste to an alternative site.

The six transfer stations have an unlimited service life if the required renewal works are undertaken. The Whareroa and Mangakino sites need an upgrade as very little has been done to these sites over the last twenty-five years. Upgrades will be focused on health and safety and efficiencies regarding handling of recovered materials.

Council has recently upgraded the Kinloch, Omori and Turangi facilities to allow for bulk loading thus reducing the manual handling of drums full of glass and other recovered materials.

Kerbside serviced delivery.

The kerbside collection contract is also up for renewal, with any new contract having to consider, developments in the recycling market, waste levy implications, product stewardship outcomes and the new waste strategy recently released by central government as well as consider how waste will be contained, such as bins or bags.

13 different kerbside collection options have been modelled and these options have been narrowed down to two.
There has been a number of factors impacting the options selection with the recent new waste strategy as well as the possible mandating the collection of food form Kerbside. (Council is still awaiting the regulation mandating food waste collection to finalised through cabinet).

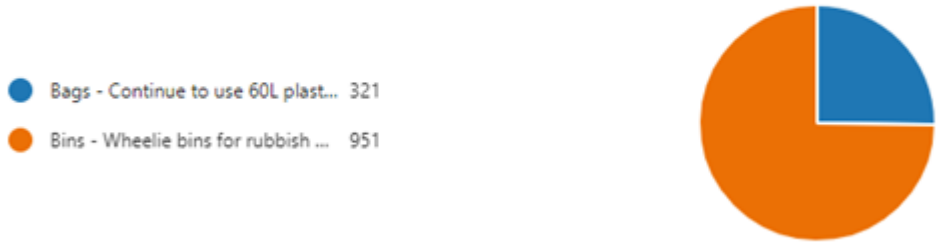
Refuse and recycling collection services can easily be extended as urban development expands around the district.

During August of 2023 council undertook some initial consultation with the community signalling a review of the kerbside service delivery and a preferred service option that provided wheelie bins based around fortnightly collections with a weekly food collection. This consultation will be used to provide feedback to elected members.

The majority of respondents preferred a Wheelie bin service.

1. Do you prefer bags or bins?

More Details



The majority of respondents selected the fortnightly service, this outcome was driven by the reflection of cost implication with most looking to avoid high costs for the service. The recommended service is the fortnightly service with a peak service from mid-December extending through to Waitangi weekend, this is to make sure that the out of town home owners are able to utilise the service.

3. Do you have a preference for kerbside collection frequency?

More Details

Council has been to the market and have required tenders to provider costings for what would be the status quo service, bags and a wheeled bin service fortnightly with a weekly peak. These two options will be consulted on through the LTP and WMMP process. This tender process also combined the operation of the district transfer stations.

Refuse service delivery contracts are tendered on a measure and value basis which allows flexibility for Council and contractors to cater for changes in material volumes. It is envisaged that any new collection contract may incorporate Council sharing more of the risk of changes in the recovered materials markets (yet to be determined).

Contractors are required to get recovered/recycled materials to market and not able to dispose these materials to landfill. Currently the contractor is required to cover the risk of market fluctuation of recycled and recovered material prices. This section of the contract may have to change with the common practise now being a risk sharing process where council and the contractor are both impacted by rises and falls in the return values of commodities.

Central government have recently undertaken a review of kerbside service across the country and are looking to local government for consistent service delivery at kerbside across the country. They consulted on a preferred methodology, which incorporates a three-bin system, food collected weekly, recycling fortnightly and waste fortnightly. It is

considered appropriate to collect material fortnightly if the smelly food material has been removed.

A proposed shift for the kerbside collection from user pays bags to a rate funded service will impact competitors in the kerbside collection market. The modelling undertaken by councils' consultants suggests that a district wide service provided by council would be cheaper for the community overall, when comparing it to a user pays competitive service market. The economies of scale, coupled with alternative week services enables an overall service delivery saving vs a mixed market share.

A move from bags to bins reduces the health and safety risks but will impact recycling bin contamination levels, as compared with the current system, the current contamination % experienced across the country is around 18% for a wheeled bin service. To address this issue most councils have employed a bin lifter who inspects the bins before collection. A three-stage warning system is also used where at the third warning the bin is removed for a period of time.

Community waste education programmes are flexible to enable them to focus on the current issues facing the community while supporting waste minimisation and reflecting current services.

LGA Compliance
Efficiency, effectiveness, appropriateness and cost effectiveness are analysed by comparing services with like Councils, contracting out service delivery in a competitive market environment and determining if there are any adverse effects from the current mix of service level delivery.

As Council operates within a competitive market environment and runs a network of disposal facilities the cost effectiveness of the overall service delivery must be related to keeping the waste stream going to the disposal sites and avoiding waste flight. Council has achieved this with a mix of rate and user charges.

Councils' satisfaction survey results have continued to be at a high level and illegal dumping of refuse while present, is at a low level throughout the district, but increases in refuse disposal prices will impact this issue.

While council has faced increases in waste facility and kerbside delivery operational contracts council also faces increases in costs from central government with the waste levy moving from $20 to $50 and for 2024 a move to $60. The ETS is the other cost increase with credits recently selling for $75. There have been some recent fluctuations in the ETS cost, due uncertainty of government policy.

The service delivery cost of the combined contract is currently unknown, so the service delivery and costs will be finalised once council has made a decision.

Community Outcomes: Provide guidelines for the scope of current and future services offered and manner of service delivery and define general levels of service which the community wishes to receive.

Customer Expectations: Information gained from customers on expected quality and price of services.

Statutory Requirements: Legislation, regulations, environmental standards and Council By-laws that impact on the way assets are managed (i.e.: resource consents, building regulations, health and safety legislation). These requirements set the minimum level of service to be provided.

The service provided by the solid waste assets is obligated to meet legal requirements defined in statute, regulation or other statutory process. This is primarily focussed on the requirements of the Waste Minimisation Act 2008 and the Emissions trading legislation 2010, the RMA defines the rules around environmental impact of operating landfills and closed landfills.

Service delivery levels of standards for the Kerbside collection service will be debated through Councils WMMP and LTP. Possible changes in frequency of collections and from bags to bins as well as moving from a user pays service to a rate funded service will all be on the table for the community to give feedback upon.

As central government are looking to (not currently regulated) mandate the collection of food waste, this service provision will now need to be part of the mix of kerbside service we deliver if the government mandate it. Council will continue to lobby central government for the need for a container return scheme which would reduce the cost of drink container collections for local Government.

The New Zealand Waste Strategy
The New Zealand Waste Strategy has been developed by Central Government as the primary tool for management of waste. It incorporates strategic planning, business and public education and linkages between Central, Regional and Local Government responsibilities.

Waste Minimisation Act 2008
Section 42 "A territorial authority must promote effective and efficient waste management and minimisation within its district".

The Waste Act legislation also requires Landfill operators to pay a levy fee for every tonne of waste disposed to landfill, thus providing and economic incentive for diversion from the waste stream as well as providing funds for waste minimisation initiatives. The fee is set to go to $60 exclusive per ton from 1 July 2024.

Central Government has reviewed the levy and the levy will now apply to more classes of landfills then just Class 1 sites. Government is also signalling that as the value of the levy fund increases that they will look to target collected revenue at providing major infrastructure that supports the onshore recovery of products and reduces NZs reliance on overseas markets.

This will mean that the current percentage of the fund currently going to local Government will change, but to date we are unsure as to the total value of levy returns being directed to local government in the future.

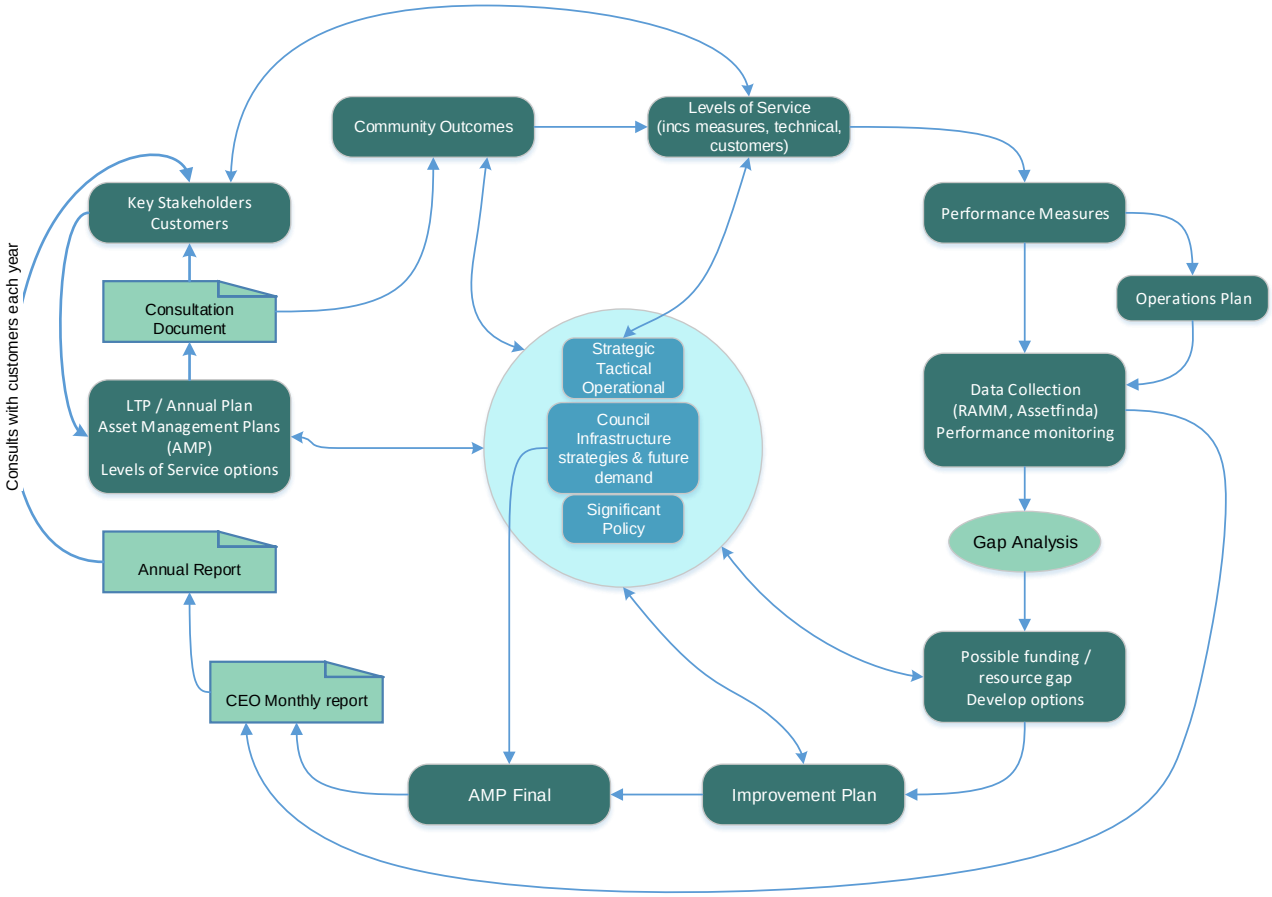
Local government have signalled to central government that the percentage of the levy given to local government should not change, as local government are required to provide additional mandated services.

Emissions trading legislation

The Emissions trading legislation 2010 began impacting Landfill operators from January 2013 onwards as emissions were reported on for the 2013 calendar year, with credits needing to be surrendered in May of 2014. Landfill operators need to surrender landfill credits based on a per tonne calculation. The cost of emission credits was $3.5-$5, but cost has now moved to $70 - $75+ which has meant a significant increase in operational cost for disposal sites across NZ.

This increase has meant that council has had to increase gate charges to cover this cost. Council will continue to evaluate the provision of Gas destruction on site, but this will be driven by the reduction in cost to operate the site due to emission cost reduction verses the cost to install and operate gas reduction infrastructure and the renewal or not of the site operating consent.

Strategic and Corporate Goals: Provide guidelines for the scope of current and future services offered and manner of service delivery and define specific levels of service which the organisation wishes to achieve.



Consultation Process and Linkages

The above diagram identifies the consultation process and reporting requirements for levels of service. It also incorporates the links to strategic documents and gap analysis and how this links into the Annual Plan and Long-Term Plan.

14.0 Types of Levels of Service

15.0 OPERATIONAL
Current operational levels of service for Solid waste are scheduled in Table 5.3. The levels of service are "how we maintain our existing assets" for our customers.

Operational levels of service fall into two categories:

Technical (asset/product related) measures, which relate to the outputs the customer receives in terms of:

- Quality
- Capacity
- Quantity
- Environmental impacts
- Availability
- Cost/ affordability
- Legislative requirements
- Comfort
- Maintainability
- Safety
- Reliability and performance
- Public Health

Service Quality (service process related) measures, which relate to how the customer receives the service in terms of:

- Tangibles (information sheets etc)
- Responsiveness
- Courtesy
- Empathy (understanding, individual attention)
- Assurance (knowledge, courtesy, trust, confidence)
- Health & Safety

16.0 TACTICAL
The levels of service stated within Table 5-1 are "why we build new assets". These are thresholds which warrant the creation of a new asset in order to maintain an optimum level of service for the asset.

17.0 IMPLEMENTATION
The implementation levels of service stated within Table 5-2 are "the standard we build a Solid waste asset to".

18.0 NATIONAL
Central government have now mandated the recyclables to be collected from kerbside, so have set levels of service for local government. Unfortunately, by mandating a set list of materials or material types, government have now locked these products into production and collection for an unknown time, without any incentive to change product design to enable reuse, or to eliminate the packaging all together. Local government could look to find ways to charge the producers of the materials collected, fees, so that there is some funding support as well as incentive to change product design.

Central government have also produced guidelines for Landfill and transfer station / resource recovery centre design and best practice. MfE are also working on a Kerbside

waste and recycling collection best practise guide, to try and raise the bar in NZ as well as try to provide common service delivery.

Government is currently reviewing the guidelines for landill classification, but this review is unlikely to impact on the Broadlands Rd Landfill until Council applies for a new consent to operate the site.

There is a requirement that councils provide for public health outcomes, this can be achieved by Councils fully providing all services, or by a mix of council and commercial market service provision. Councils Waste Assessment identifies that public health is currently being adequately catered for through the mix of service provided in the district.

19.0 SIGNIFICANT SERVICES

The significant services provided by Council are the safe collection and disposal of residual refuse and the provision of waste minimisation initiatives. This is underlined by the provision and operation of the transfer station sites and the Landfill for residual refuse disposal as well as the kerbside collection service in urban areas.

Waste collection and disposal is classed as an essential service during the Covid-19 outbreak, meaning waste collection services and disposal facilities need to be able to operate, although services may be in a limited form depending on the situation.

Public Health is the main driver for the provision of services in the waste field and while it is important to recycle and divert waste, at times of emergency, such as the recent pandemic, the ability to provide all services may be compromised with residual safe collection and disposal being the only alternative.

Solid Waste Objective –To protect public health and safeguard the Taupō district environment by ensuring refuse and recycling is managed in a safe, efficient and sustainable manner that maintains natural and aesthetic values. Current Levels of Service

A * identifies that the level of service or measure is included in the LTP

Number	Core Value / Key Service Criteria	Level of Service	How we measure it (customer)	How we measure it (technical)	Current LoS Performance	How We Monitor Performance	Target LoS Medium Term (1-3 years)	Target LoS Long Term (4-10 Years)
T1	Economy	We provide recycling and waste collections across the District. We operate the Broadlands Rd landfill in Taupō. We will ensure waste is disposed of safely and that effects on the environment are minimised. We will provide a weekly collection service for the approximately 6,000 tonnes of non-recycled rubbish produced in the district each year. We will transport this waste for disposal to Council's landfill at Broadlands Rd, Taupō. We will provide a weekly collection for disposal of paper, glass, plastic and aluminium that is sorted for recycling. For the CBD we will provide kerbside collection for recycling and daily litter collection Ensure that refuse disposal and recycling / recovery facilities and services are available throughout the district.	Service requests identifies community is satisfied with the availability of refuse and Recycling / recovery services district wide.	Kerbside service delivery is available in urban areas. Landfill tonnages are measured over the weighbridge. District facilities are within similar distances for most members of the community.	Facilities and collections are provided. Refuse facilities are available throughout the district except on the Eastern lakeshore and Atiamuri.	Service requests Identifying areas of urban growth to determine the need for extension of service delivery to make sure that distances remain similar throughout the district.	80% of service users are satisfied with our recycling and refuse services* 80% of the district is satisfied with our recycling and refuse services* To retain the existing district facilities. Less than 5 complaints per month due to lack of service	80% of service users are satisfied with our recycling and refuse services* 80% of the district is satisfied with our recycling and refuse services* To retain the existing district facilities. Less than 5 complaints per month due to lack of service

Table 12-1: Tactical Levels of Service

O1	Economy	We will divert suitable waste from landfill.*	The quantity of material (tonnes) diverted from landfill as a percentage of the total waste stream moving from 51% to 60% by 2034	43 % 19/20 Weighbridge data	48 % 22/23 Weighbridge data	50 % 24/25 Weighbridge data	52% 25/26 Weighbridge data	54% 2026/27 55% 2027/28 57% 2028/29 58% 2029/30 60% 2030
O2	Environment	Customers are satisfied with the function and appearance of the transfer stations and Landfill	Less than 5 complaints regarding facilities are received per month	No resource Consent breaches.	No Complaints have been received.	Service requests Satisfaction survey Consent reports		
		Customers are satisfied with the street Litter bin a recycling bin program	Service requests re bin program for overflowing bins	Less than 5 bins per month are reported as overflowing	5 complaints or less	Service requests	Less than 5 complaints per month regarding overflowing litter and recycling bins	Less than 5 complaints per month regarding overflowing litter and recycling bins

		We comply with the resource consent conditions for our landfills.*	resource consent conditions for our landfills that are complied with	WRC consent review	100 per cent.	100 per cent.	100 per cent.	100 per cent.
O3	Health & Safety	Facilities will provide a safe environment for users	No health and safety breaches recorded	Contract reviews Service requests	No health and safety breaches recorded	Site audits	No health and safety breaches recorded	No health and safety breaches recorded

Table 12-2: Operational Levels of Service

20.0 LINK TO PROJECT

The following table show the links between the levels of service adopted and the current projects. Everything we do, we do in order to provide a level of service to the community.

Solid Waste Projects	Link to LOS
NEW WORKS	
Cell Developments / capping	T1, O1, 02, O3
RTS upgrade Broadlands RD	T1, O1, 02, O3
Mangakino / Whareroa site upgrades	T1, O1, 02, O3
Site Capping	T1, O1, 02, O3
Street Recycling bins	T1, 01, 03
Gas flare	T1, 01, 02
Big Belly Refuse Bins	01, 02, 03
Leachate Pipe Upgrade	01, 02, 03
Compaction bin	01, 02, 03
OPERATIONS AND MAINTENANCE	
SWAPs	T1, 01
Bylaw Review	T1, 01, 02,
RENEWALS	
Bin Renewals	T1, 01, 02,03
Facility Renewals	T1, 01, 02,03

Table 12-3: Link between Level of Service and Project

21.0 Consultation

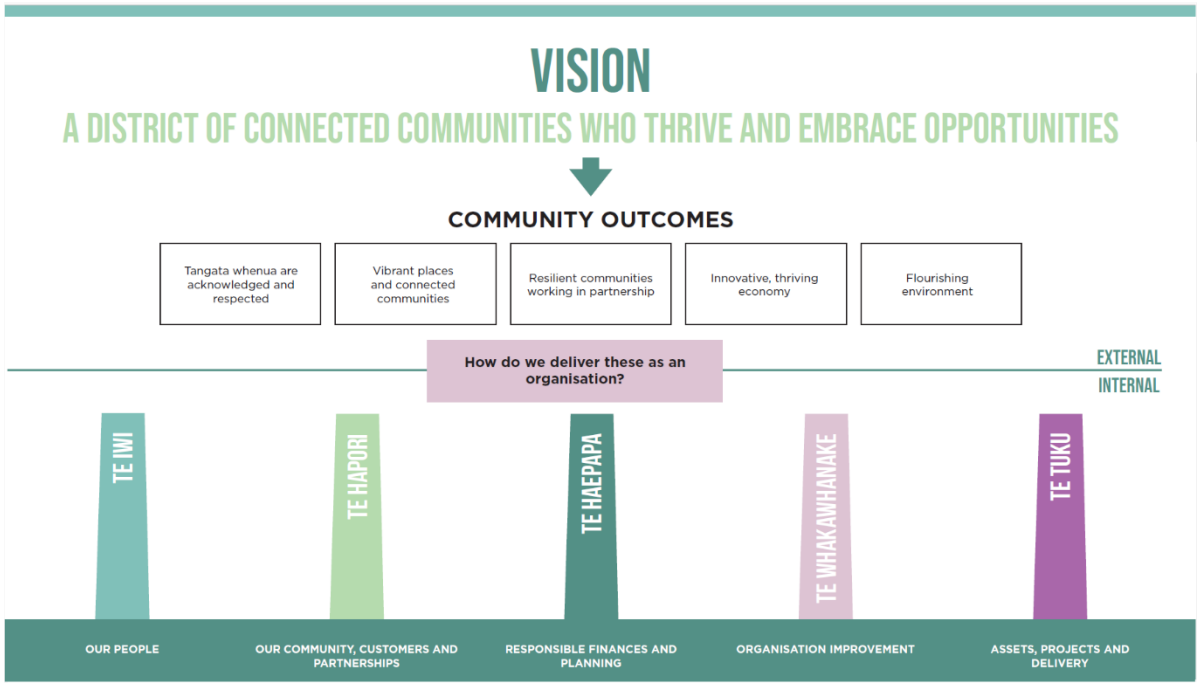
Council vision and community outcomes are listed below.

At present, resident contact is generally on a one-on-one situation in the handling of customer complaints or in council and community board meetings. Regular advertised public forums are held to encourage and provide for ratepayer opinions and concerns to be heard. Submissions and suggestions for desired project and improvement work for Council consideration and inclusion into the LTP are called for during consultation.

Council undertakes consultation when developing the WMMP and will also undertake consultation with the community during the LTP development.

Levels of service for Solid Waste will be signed off by Council prior to the LTP consultation process.

The commercial waste service providers have been consulted as part of the development of the WMMP as well as the Medical Officer of Health.



Customer Groups

The Solid waste service provision has a number of customers, all properties and businesses need to dispose of refuse, and most will participate in the diversion of waste if there is the incentive to do so.

Council's kerbside collection service provides waste and recycling service to the urban centres and central CBDs. Rural property owners are serviced by the provision of district transfer stations. The commercial market also provides some rural service delivery and provides for larger commercial waste needs.

With a proposal to move to rate funded kerbside collection of waste, the commercial market will be marginalised out of the domestic household service provision, as very few in the community will want to pay additional services if they are already paying for the service through a targeted rate. But there will be an opportunity for the commercial market to provide services above the current proposed service levels being provided by Council. For instance, the kerbside service provided to the commercial sector won't be sufficient for larger waste and recycling volume users such as restaurants and bars and some larger retail outlets. Council will be looking to the commercial market to provide additional services such as additional collections and large skip bins etc.

Council has provided the disposal point for waste at the Broadlands Rd landfill which enables the community to dispose of mostly non-kerbside waste, and the site provides a mix of recovery options as do the district transfer stations. The Broadlands Rd Transfer Station will continue to be the disposal point for the districts waste, with a possible change to hauling waste to an alternative disposal site after further diversion or disposal at the Broadlands RD landfill if a new operational consent is obtained.

Litter and recycling bins are provided throughout the district to cater for waste and recyclable disposal when people are out and about and for the tourist and visitor market.

Overall, the solid waste customer group is covered with a mix of Council and commercial market service provision. Council has incentivised diversion of materials from landfill by setting a pricing mix that diverts waste.

22.0 Changes to Level of Service

The Waste Management and Minimisation Plan provided several changes to levels of service. Operational increases in the plan include:

- Kerbside service delivery / contract renewal /options debate
- Broadlands RD Landfill consent renewal (Possible Gas Flare)
- Diversion of C&D waste / Upgrade RTS
- And if Councils is unable to obtain a new operating consent for the landfill, then trucking of waste to alternative disposal site / Upgrade RTS
- Support for food rescue in the district
- Support for community repair
- Single use items such as coffee cups
- Solid Waste Bylaw review

Capital expenditure to maintain the level of service includes:

- Increasing recycling capacity at district facilities
- Cell developments
- Gas flare
- Gas wells
- RTS upgrades / C&D waste diversion and (possible haul out ability if no consent)
- Leachate pipe capacity
- Purchase of wheeled bins and food caddies if bin program selected
- Power upgrade at Broadlands Rd
- Compactor bin for district compactor sites

Budgets will be revised between draft and final AMP's to ensure a financially sustainable budget Council wide. The level of service implication of these budget changes is shown in table 9-1 within the Financial Summary section.

23.0 Service Level Measurement

Service level achievement is measured by way of service request performance and information gleamed from monthly contract meetings with contractors and satisfaction surveys. The community is also able to submit to Council during annual and Long-Term Plan development and the WMMP consultation process.

Resource consent compliance is reported yearly by the Waikato Regional Council after they undertake onsite audits and reply to complaints if any. (The Broadlands Rd Landfill has never had a complaint related to the operating consent). The landfill consent also requires a peer review overseer for the site who also compiles a yearly report on the site which covers both capex and operational matters.

Refuse tonnages are measured over the weighbridge and reported to the Ministry of the Environment on a monthly basis, with these tonnages passed on to Council in the monthly Council performance report.

Key performance indicators are reported to council on a monthly basis and overall asset performance is provided in the annual performance report.

As part of the consultation process the WMMP has been signed off by the medical officer of health who makes sure that the services provided adequately provides for public Health.

Council has undertaken a section 17a review which supported Councils direction of combing operational service contracts, with a contracted-out service provision.

SOLID WASTE & SUSTAINBILITY

Council has a focus under the Solid Waste asset cost centre to reduce the impact of waste on the environment. This has led to a raft of services and assets that assist Council in achieving this goal.

Council has implemented a raft of service delivery in the form of materials identified for recycling, all of which are listed on council's web page as well as at district facilities.

Pricing Incentives

Council also uses pricing incentives to drive these outcomes, with waste a pay as throw at facilities and recycling covered within the rates component, so the communities view the offloading of recyclables as free.

Pricing differentials also incentivise the community to off load materials in different locations that are free of other materials or contamination. This allows council to deal with a clean product and prepare these for market. Case in point is the low cost for concrete disposal, which commercial operators bring to the facilities without contamination, allowing council to crush this material and provide it back for sale to the community at a low rate, thus avoiding landfilling this material.

Council also provides a low disposal cost for green waste disposal, again to get the community to sort this material which eliminates contamination. Green waste is then shredded and offered back to the community as mulch.

Walk the talk!

Council offices have all had their refuse bins removed and food waste reuse implemented, resulting in a reduction in office waste.

Sustainable litter disposal

Council has invested in Big Belly refuse bins for street litter. The bins are compaction bins which increase capacity. They compact using a solar panel to charge the battery, the bins also send a message to the collection contractor when they are full reducing transportation cost for this service and also reducing the number of bins required due to the extra capacity.

Council undertakes a raft of waste education programs focused on waste reduction and reducing the impact of the environment. Council has recently partnered with a local Iwi school who are then empowered to teach waste education to district Marae.

Council also supports the community in running litter collection days and food waste composting and has developed a district wate minimisation fund to increase the input from the community regarding waste minimisation and sustainability.

Council joins with other Councils to lobby central government on waste policy and have been successful in getting government to introduce product stewardship for several hard to deal with wastes.

Overall, the solid waste cost centre has large sustainability focus with all services having a reuse, reduce, recycle component.

Council also has an emission reduction policy, with one of the focus points being methane production from Broadlands RD. Each emission reduction option must be supported by a business case.

Council will consider through the tender for kerbside service delivery the cost of electrification of some of the vehicle fleet. This will be done by obtaining pricing through the tender process for different vehicle configurations.

Council is also looking to utilise either worm farms or Eco Gas for the disposal of fats Oils and greases going forward as currently this material is going to landfill into a number of retention bags but the system is failing and the fat is ending up in the Leachate pond and leachate pipe line needing to cleaned out regularly.

The collection of food scraps form kerbside has the potential to divert 2500 tonnes of food waste from landfill thus reducing green house gas emissions. In reality its is estimated that council might collect around half of this volume, estimated 1000 tonnes per annum.

24.0 FUTURE DEMAND

25.0 Factors Affecting Demand

There are several factors that influence demand for the Solid Waste assets and services within the Taupō District. These are described below and include:

- Transfer Station location
- Refuse Collection area boundaries
- Expanded recycling options
- Tourism
- Out of district home ownership
- Service provision by the private sector
- Growth in development and therefore population / economic activity
- Community expectations
- Changes in levels of service through primary drivers such as legislation
- Lifestyle trends
- Economic instruments and the economy
- Council policy and plans
- Product Stewardship schemes
- Changes in legislation and National direction
- Solid Waste Bylaw
- Waste levy
- Education
- Commercial competition
- Events
- Public holidays
- New products and product development
- Pandemic
- Green sword
- The emissions trading scheme

26.0 Demand Management

Demand management is:

> "……*the modification customer demands for services in order to maximise use of existing assets or to reduce or defer the need for new assets."*

A unique feature of demand management in Taupō District is the managing of the fluctuating demand. Taupō has a large percentage of unoccupied dwellings which means that the base demand as compared to dwelling numbers is low. However, this demand increases significantly during peak holiday periods, tourist seasons and when there are large events in town.

One of the key objectives of demand management is to seek non-asset solutions (such as reduction, reuse, and recycling) as alternatives to constructing new asset-based solutions.

The use of economic instruments is playing an ever-increasing roll in the modification of customer demands. By applying or not applying a charge, Council

can provide the incentive or disincentive that will promote the objectives of its Waste Management and Minimisation Plan.

An example of this is the pricing of green waste less than waste disposal, which results in the community separating this material to achieve a saving, and results in a usable material for Council and the diversion of green waste to tip face and the reduction of greenhouse gases.

The overall service provision cost must be funded, but by using the correct combination of rates and fees and charges to create the correct cost differential, waste diversion can be achieved, and behaviours changed for the better.

Central Govt are also using pricing to influence change in the waste sector, with firstly the waste levy which will rise to up to $60 per tonne, thus making anything that costs less than that, a viable waste reduction option. And secondly the ETS, which places cost on emissions, which is a mechanism to reduce emissions from landfill, ultimately pushing the cost of waste disposal higher.

With the waste levy rising to $60 central government will be receiving a vast amount of revenue and have stated that will develop an investment strategy focused on investment in processing recovered material within the country as apposed to relying on overseas markets.

Council will receive funds from the Levy based on district population and can make extra applications to a consolidated fund (WMF) outside of the Population criteria. The introduction of a waste levy has had cost implications for Council in regard to reporting of information, handling of monies for the Levy and the making of applications for funding of waste minimisation programs. This extra cost has been factored into the operational budgets for the cost centre.

Central government is looking to adjust the funding allocation to Councils, which suggests that the current percentage of the fund going to local government will change, and local government may no longer receive a 50% slice of the additional funds generated by the increased levy. There has been some discussion around a flat rate for Councils with additional calculation around population. The increased funds will go to large investments to enable the country to invest in game changing infrastructure, something that local government struggles with.

Central government have also listened for the call that the levy should apply to more than class 1 landfills taking household waste. Government has regulated all but clean fills to pay the levy meaning a further increase in levy funds available.

The increase in cost at the gate for some of these facilities now about to be levied will have some negative outcomes with an increase in illegal dumping projected. Previously increases in disposal rates have seen a short-lived increase in fly tipping but this has flattered out once the price gained acceptance. With increases to disposal costs spanning several years, there is a chance that the spike in illegal dumping could become prolonged, with the resulting increase in clean up costs.

If the percentage of the waste levy remains similar to the current value, then council will receive considerably more $$ and will look to utilise a portion of this additional funding and any funds not spent from previous years to support fund the kerbside bin rollout. The money being used to fund the bin component of the service.

It is acknowledged that we cannot recycle our way to a waste free country as globally we only actually recycle a small proportion of the total waste stream, hence the need for Govt to intervene and provide policy that diverts waste, as well as places the responsibility in some cases back on the producer of that waste.

Council will continue to try and identify material in the waste stream that can be recycled and or reused such as the crushed concrete, currently being sold from the Broadlands Rd Landfill.

During the identification of new waste minimisation opportunities Council must analyse whether the service is sustainable environmentally and economically. Waste that has no residual value and thus needs a high level of financial support from Council must be thoroughly investigated as to its suitability for extra funding.

Criteria for extra funding are, cost, volume of material per cubic metre or tonne diverted from Landfill and the amount of public good as well as long term sustainability issues and current legislation. Most opportunities will pass or fail on the cost factor, but opportunities to divert more waste become more economical and sustainable the higher the cost to dispose to landfill.
Council's current policy of charging for waste going to disposal and allowing a free (Rate Funded) recycling drop off has kept a high level of recycling participation.

Council as a landfill owner must also keep in mind that waste diverted from landfill will influence the revenue from the site which may need to be funded elsewhere.

With an upgrade to the transfer station at Broadlands Rd planned, Council will look to divert more C&D waste, with timber being one of the main divertible materials. The ability to generate a market for any of the diverted C&D material will be a main priority.

Waste legislation is set to further drive waste minimisation in NZ with central government able to identify priority products that must then come under a product stewardship program, this may in the future reduce the cost to rate payers and place the cost of recovery on the purchaser of products.

Taupo District Council, along with the majority of other Council's will continue to lobby government regarding product stewardship, and recently passed a remit with 90% support that supported Container Deposit legislation for containers.

Govt have recently produced a list of priority products and product stewardship programs are now required for all of these materials. Plastic packaging, Tyres,

Electrical and electronic products (e-waste), Agrichemicals and their containers, refrigerants, and farm plastic's.

The main savings for Council will be if drink containers become a priority product, this will mean that the value of drink containers will increase, with the obvious litter prevention benefits, as well as the value of products collected from kerbside paying for a portion of the collection costs thus reducing cost to the rate payer.

Unfortunately, the current Government have delayed the implementation of the container return scheme which will leave the door open for industry to insert their own scheme that relies on Kerbside collections, which could mean the cost of collection will remain with rate payers.

Peak Demand
Asset based solutions include:

- Increasing the size of current facilities to cater for increases in peak demand
- Construction of additional cells at the Broadlands Road landfill
- Provision of compacting street refuse bins in high use areas
- Upgrading recycling facilities to enable bulk loading to market or a bulking station
- Combing operational contracts to make the most of operational capacity at district facilities
- Upgrading of the RTS at Broadlands Rd to divert C&D waste

The Broadlands Rd Landfill resource consent conditions require that Council has an independent peer reviewer that undertakes inspections of capital works such as new cell developments but also provides guidance on day-to-day operations. The reports provided by the peer reviewer can affect maintenance requirements. Asbuilts from capital works are kept on file as well as forwarded to the Regional Council.

Council has one disposal site for residual waste in the district being the Broadlands Rd landfill. This site can easily cope with increased waste volumes, but Council has "ring fenced" the site for the district to stop waste coming into the district from other areas that may have higher residual waste charges. Council's landfill consent allows for 50,000 tonnes of waste per year with the current tonnage being 30,000 annually.

The Broadlands Rd landfill enables Council to avoid the cost of transporting waste to other facilities and Council utilises a portion of the disposal fee to support waste minimisation programs.

The consent for the Broadlands Rd landfill expires in 2027 so council is in the process of gathering information to enable council to consult over a consent renewal now as apposed in a few years, as council needs certainty regarding the consent period to enable council to invest in gas destruction infrastructure.

In 2017 Opus International produced a development plan for the landfill that identified an additional 600,000 landfill fill volume, but this will require 354,000 cubic metres of

cut volume to be removed, some of which will be used as fill material as the site develops.

Based on the Cell 2D tender the rough order development cost for the landfill south of 2D and 2C1 would be $6.8M (including 20% contingency). This equates to around $11.30m/3 of void. While higher than the average from previous cells of around $6.20, it is still highly economic compared to the landfill charges or the cost of transferring waste out of district. Primarily the higher the unit cost arises from the very large cut to waste required in the southern ridge, so any strategy that can use this material elsewhere will aid the overall economics.

Council is utilising additional fill in Council projects around the district that are close enough to negate transport costs. The solid waste cost centre is not charging for this material as it is seen as win, as council ultimately has less material to remove for future cells.

Council owns and operates 6 RTS sites that ring the lake that cater for the smaller urban areas as well as rural members of the community. Changes in refuse disposal demand can be managed by the increasing or decreasing the numbers of refuse haulage bins taken to landfill and hours of operation for the individual sites. Amalgamating district facility contracts will enable operational continuity as well as, it is hoped, realise management savings.

Due to cost, Council only services urban areas with its kerbside collection contract but all district transfer station facilities can handle the full suite of recyclables as well as additional items.

The Kerbside refuse and recycling contractor has the ability to off load and stockpile waste and recyclables at district facilities to enable them to cater for increases in demand caused by seasonal population increases. Council also incentivises waste minimisation practises by rate funding services where waste disposal is predominantly user pays funded.

With a possible move to a wheelie bins system for refuse and recycling collection the kerbside contractor will have the ability to provide the correct collection resources, as currently the volume is unknown as the contractor is required to collect all of the material placed for collection which of course can vary wildly during the busy summer period.

The proposed new contract arrangements will provide a fortnightly collection, with increase in service to weekly over the busy period. The 240L wheelie bin for recycling coupled with the glass crates and food bin will provide the diversion opportunity. The issue of out of town home owners placing bins at the kerb and not being there to bring them in will need to be discussed, the current option is to have a local person working with their community to put the bins back for them.

Recovered product quality is a major factor in being able to support the collection and sale of product.

Council's current kerbside service relies on the community to sort material into selected products so that they can easily be deposited into the collection vehicle. This process provides a high-quality end product with virtually zero contamination. Low

contamination rates mean easier access to overseas markets and higher return values. Comingled collection methodologies require intensive post collection sorting and comingled collection models have contamination rates of around 18%, which is now unacceptable to overseas markets, contaminated material is diverted at the MRF but will become a disposal cost for council, so council will need a robust education campaign along side the bin auditors looking for contamination.

Councils recently surveyed the community and found support for a change to a wheeled bin service. This service will ultimately have to have three strike process for continued contamination practices. A wheeled bin service brings the benefits of reduced H&S issues due to reduced manual handling, environmental benefits due to bags not being tampered with and recycling crates not being blown over with material flying down the streets and the inclusion of a food collection service which is estimated to capture a 1000 tonnes per annum so good emissions reduction.

Govt are looking to invest into new onshore processing of recovered materials, but this investment is still at least two years away from providing support to the market.

While council will have to deal with a higher contamination rate in the recycled product with the proposed bin service, it will minimise the health and safety risk of having runners lift product which results in slips and strains as well as cuts from sharps in bags.

By having a rate portion in the solid waste cost centre to service the kerbside contract, Council achieves several outcomes:

- Lessens the ability for competitors to compete with service delivery which would undermine Councils ability to divert material as the commercial market will compete with additional capacity which then undermines councils waste minimisation goals.
- Council acquires funding for the district facilities from out of district homeowners
- Allows council to manipulate pricing to incentivise diversion

With a review of the current kerbside collection contract council will consider as one of the options, a fully rate funded kerbside collection service. Fully rate funding will eliminate the price incentive to recycle but could provide a cheaper service to the community than the current mix of commercial and council service delivery.

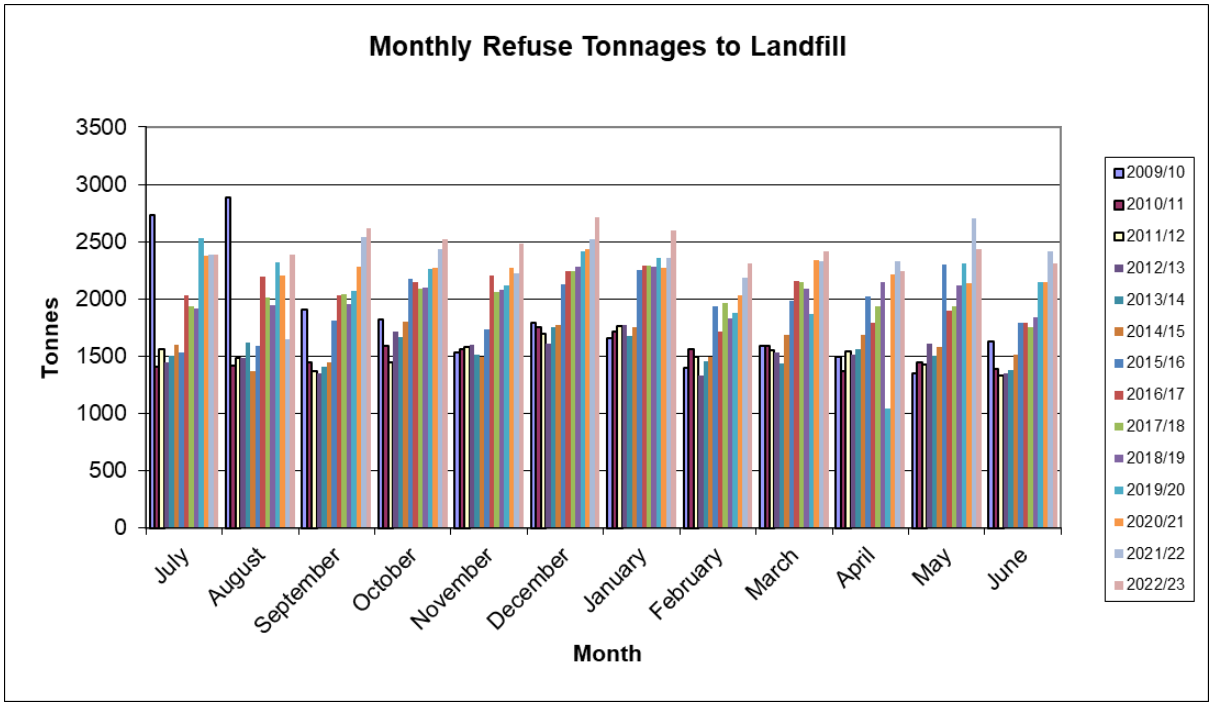
A fully rate funded service will mostly eliminate commercial kerbside competition unless there are service gaps in the service delivery such as fortnightly collections where people are prepared to pay additional cost for weekly services.

The bin suite being proposed, is designed by its vary bin sizes to drive diversion, with less waste capacity and increased diversion capacity.

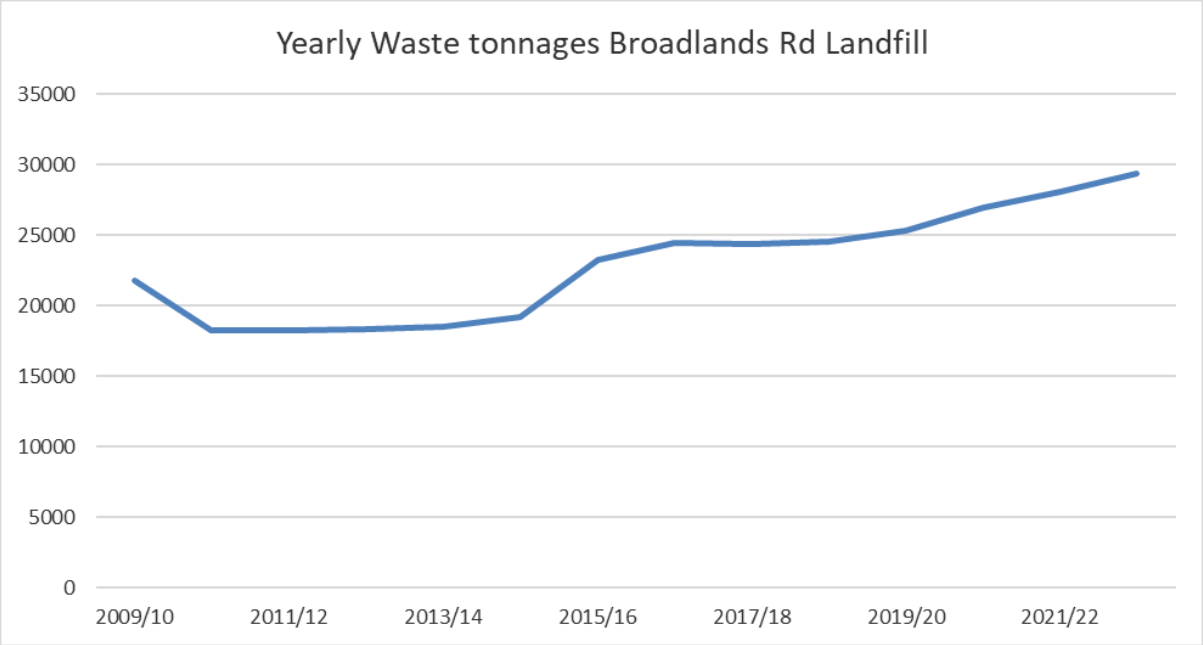
Council has incorporated smart technology into the provision of street litter bins in the district. Council currently has 55 Big Belly compactor bins located in Turangi, Taupo and Kinloch. These bins have the capacity of six conventional 60L bins as they compact the refuse once it reaches a certain level. The bins are also powered by solar energy and let the collection contractor know when they are full, thus reducing vehicle movements. Bins have been deployed in high use areas and have greatly reduced the incidences of overflowing refuse bins and windblown litter. Another benefit is the reduction in the number of refuse bins scattered around.

Waste Volumes

Over the past 5 years Council has seen an increase in waste volume from the average 25000 tonnes per year to now around 30000 tonnes per year. This increase is directly linked to an increase in economic activity after the economic lull over the last period.



Month	tonnes of waste to Landfill													
	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
July	2730	1410.97	1558.6	1448	1502.95	1594.47	1527.22	2029.61	1934.26	1919.14	2527.53	2378.1	2386.65	2390.7
August	2886	1417.26	1482.23	1482.66	1616.13	1373.27	1592.42	2198.63	2015.12	1945.35	2323.45	2203.5	1645.57	2386.6
Septembe	1904	1444.88	1372.23	1345.95	1402.59	1450.07	1814	2033.29	2041.41	1956.81	2072.67	2277.28	2541.88	2615.38
October	1818	1592.06	1448.44	1715.96	1666.97	1800.8	2171.65	2144.58	2090.59	2094.74	2258.24	2269.4	2438.44	2515.98
November	1534	1558.83	1582.05	1601.64	1515.43	1491.25	1736	2206.23	2059.57	2083.06	2115.07	2275.22	2219.98	2479.97
December	1789	1750	1697.72	1604.05	1757.31	1775.44	2125.5	2239.38	2242.12	2281.87	2412.4	2437.05	2521	2716.56
January	1655.7	1717.61	1766.87	1775.53	1679.22	1749.91	2250.85	2293.95	2291.73	2278.65	2354.82	2275.36	2355.21	2597.15
February	1394.03	1556.47	1493.79	1326.12	1451.05	1492.62	1930.57	1709.35	1968.46	1832.38	1873.46	2033.31	2182.02	2306.32
March	1584.95	1589.67	1548.54	1527.34	1433.47	1685.77	1981.57	2157.02	2148.19	2084.12	1870.52	2340.27	2328.42	2410.3
April	1491.66	1364.48	1538.04	1517.1	1564.1	1683.29	2020.48	1792.15	1930.14	2148.26	1042.35	2211.04	2333.09	2243.24
May	1350.71	1443.83	1421.99	1605.68	1507.35	1584.50	2302.28	1900.3	1938.73	2112.66	2307.43	2132.25	2704.71	2430.03
June	1627.97	1384.01	1330.66	1352.72	1382.55	1511.16	1794.96	1786.35	1750.34	1836.49	2142.83	2150.63	2411.54	2313.03
Total	**21766.02**	**18230.07**	**18241.16**	**18302.75**	**18479.12**	**19192.55**	**23247.5**	**24490.84**	**24410.66**	**24573.53**	**25300.77**	**26983.41**	**28068.51**	**29405.26**



Recycling volumes had also increased proportionally but the main contributor to the increase is the construction and development sector.

This is a difficult market to deal with as construction sites have multiple parties accessing the site at different times with no one party being responsible for the diversion of waste materials or implementing recycling systems.

Most construction site operators compare the time and cost and energy of diverting material to the amount and cost savings and quickly abandon the option. This coupled with cheap large-scale waste disposal options in the form of skips makes waste reduction a difficult proposition.

If material is diverted there is still a lack of local markets that are prepared to utilise this type of material.

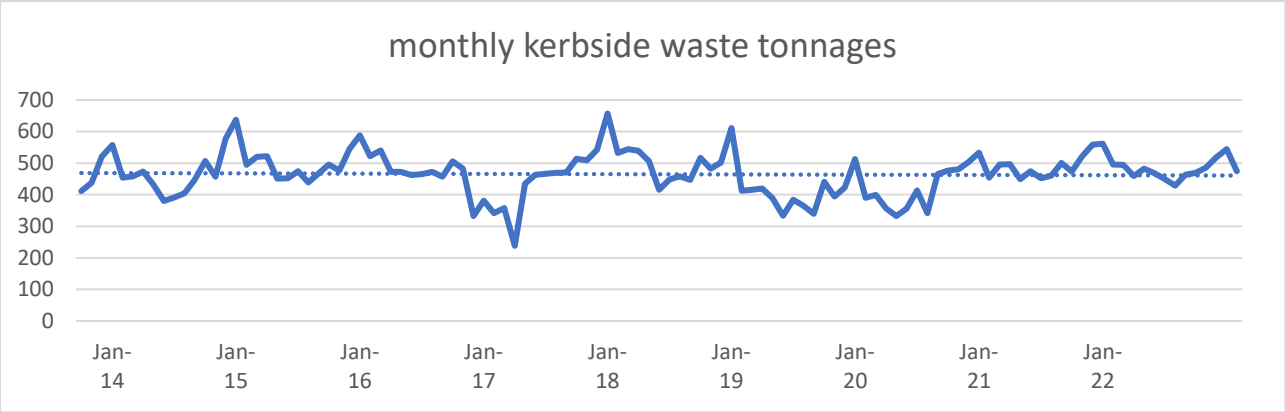
Central Government are looking regulate building sites to require waste plans when building, with the implementation of this dependant on the looming election. Some Councils have provided bylaw regulations to achieve the same outcome, but to replicate this across local government will be expensive and it would be better suited to national regulation.

Council, with the upgrade to the Broadlands RTS will also look to focus on diverting C&D waste by sorting at the disposal point, with Council looking to the waste minimisation fund for a share of the upgrade costs.

In regard to growth, a large portion of the increase in waste tonnages is the impact of house builds over the last three years. With the central bank increasing the OCR it is envisaged that the waste tonnage from new builds will look to decrease from 2024 onwards until inflation comes under control.

It is difficult to match waste production to population as a large portion of the waste is commercial and industrial waste coupled with C&D waste. Population is taken from the

census, and this does not equate for increases in population over the busy period for the Taupo district.



The above graph shows that kerbside bag tonnages have remained reasonably static over the last 9 years, thus supporting the fact that the increase in waste generation is due to the commercial market not the domestic household.

The 2023 year looks like generating around 30,000 tonne of waste to landfill, and divert more of this Council will provide a kerbside collection of food waste, estimated to divert around 1000 tonnes and Council is also looking to upgrade the RTS at Broadlands to divert more C&D waste which currently makes up some 7500 tonnes, it is unknown at this time how much of that material can be diverted.

27.0 Plans Related to Growth

In addition to the general Council planning documents such as the District Plan there are other planning documents that relate to demand in relation to the Solid Waste assets and services. These include:

Growth Management Taupō 2050 - The Council's asset management plans need to be aligned with the strategy to ensure more efficient and affordable provision of infrastructure for the identified growth areas.

- Infrastructure Strategy
- Taupō Urban Structure Plan
- Taupō Town Structure Plan
- Kinloch Structure Plan
- Taupō West Structure Plan

6.4 Growth

6.4.1 GROWTH MANAGEMENT STRATEGY

In June 2006 the Council adopted Taupō District 2050 (TD2050), the Growth Management Strategy for the District. The growth management strategy identifies where urban growth is anticipated so that land use and infrastructure planning can be aligned. TD2050 has been incorporated into the District Plan by way of plan changes, particularly Plan Change 21 which identifies the future urban growth areas.

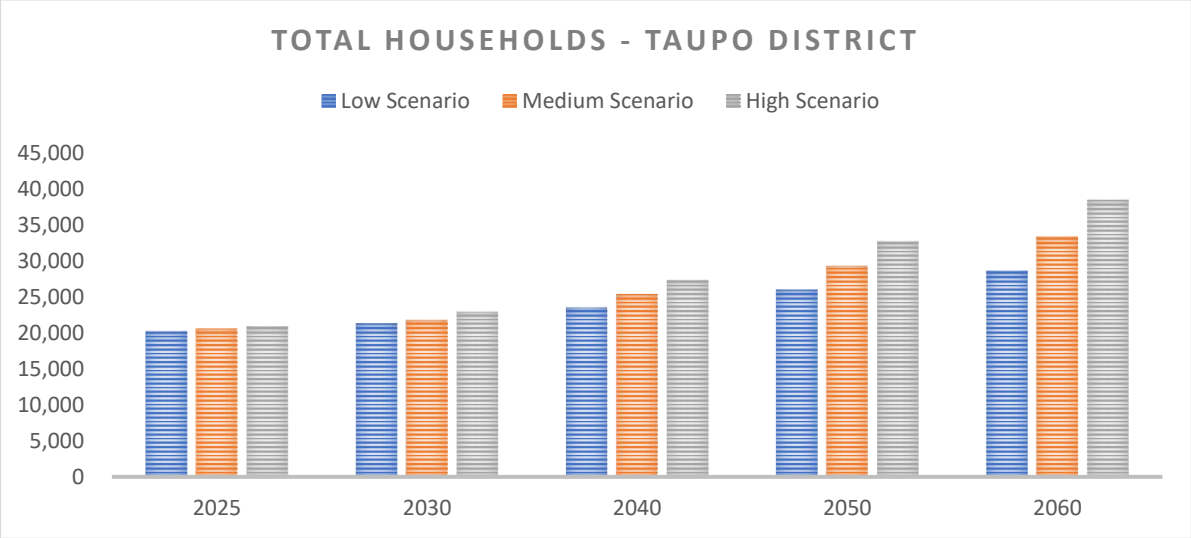
This strategic approach to integrating land use and infrastructure is intended to be supported by subsequent structure planning of the urban growth areas to identify the detailed settlement pattern and infrastructure servicing. Council has prepared structure plans for:

- Kinloch
- Mapara Valley
- South-western Bays Settlements (including Turangi); and
- Commercial and industrial areas within Taupō Township

GROWTH FIGURES

Council has undertaken modeling of population growth and produced low, medium, and high scenarios, and while these numbers will allow council to determine possible waste production in the district, they do not consider the impact of visitor numbers over the peak summer period. We can generate a Kg per person waste number, but it won't be fully accurate.

Total Population					
2021 =	41,040				
	2025	**2030**	**2040**	**2050**	**2060**
Low Scenario	42,100	44,300	48,900	54,100	59,400
Medium Scenario	42,500	45,800	53,000	61,400	70,200
High Scenario	42,900	47,300	57,200	69,000	81,800



Average Household Size								
	2006	**2013**	**2018**	**2025**	**2030**	**2040**	**2050**	**2060**
Taupō Township	2.5	2.4	2.5	2.5	2.4	2.4	2.4	2.4
Tūrangi	2.5	2.4	2.4	2.4	2.4	2.3	2.3	2.2
Marotiri	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5
Mapara	2.6	2.6	2.5	2.5	2.5	2.5	2.4	2.4
Northern Rural	2.9	2.9	2.8	2.8	2.8	2.7	2.7	2.7
Lake Taupo Bays	2.5	2.3	2.3	2.3	2.3	2.2	2.2	2.2
Eastern Rural	2.9	2.4	2.3	2.3	2.2	2.2	2.1	2.1

Average Taupō District	**2.6**	**2.5**	**2.5**	**2.5**	**2.5**	**2.4**	**2.4**	**2.4**

Cumulative New Builds by Demographic Catchment								
	2025	**2030**	**2035**	**2040**	**2045**	**2050**	**2055**	**2060**
Acacia Bay	16	74	176	321	511	656	747	817
Brentwood	12	28	48	70	100	130	160	190
Hilltop	8	19	34	50	70	90	110	130
Kinloch	120	234	365	509	614	707	707	707
Kuratau	0	0	0	2	2	2	2	2
Kuratau/Omori	47	81	81	81	81	81	81	81
Nukuhau	169	316	575	983	1,265	1,355	1,355	1,355
Nukuhau-Rangatira Park	16	38	68	100	140	180	220	260
Ohakuri	4	9	14	19	24	29	34	39
Omori	4	59	64	69	76	81	86	91
Richmond Heights	4	9	14	19	24	29	34	39
Tauhara	8	19	34	50	70	90	110	130
Taupō Ward	0	0	0	0	35	35	35	35
Tūrangi	33	172	286	376	441	491	541	591
Waipahihi	4	9	14	19	24	117	342	567
Wairakei-Broadlands	8	19	34	50	70	90	110	130
Waitahanui	12	28	48	70	100	131	161	191
Whareroa North	0	11	66	121	165	165	165	165
Wharewaka	469	802	1,106	1,199	1,353	1,573	1,782	1,881
Total	**934**	**1,927**	**3,027**	**4,108**	**5,165**	**6,032**	**6,782**	**7,401**

OCCUPANCY PER DWELLING

The long-term trend for more than fifty years has been for a decrease in the number of people per dwelling. This is true across all ages. Occupancy among aging populations is especially low, with widowed partners typically living alone.

Council uses a Household Unit Equivalent (HUE) to convert between population figures and the number of dwellings. In Taupō District, this figure is complicated by holiday homes which form approximately 30%[1] of the district's dwellings. This figure is difficult to fully determine due to the difference between out-of-town ratepayers and what is likely to be deemed a holiday home.

However, because of this high number of possibly empty homes for a significant part of the year Council needs to consider peak usage and populations when determining demand.

Council's review of the Waste Minimisation Plan has identified that the status quo in regard to additional infrastructure, in the form of new transfer stations, for the next ten years is the best direction for Council as it allows for a mix of Council and commercial service delivery and enables the community to select what best suits their needs.

Several commercial waste collection service providers are now operating in the market and residents can contract to these service providers and thus potentially

negate the need for capital investment by Council in new infrastructure. Council needs to be flexible and be ready to adjust service provision depending on the market.

With the review of Kerbside collections services, Council may choose to rate fund service delivery going forward, and we must understand the implications of this on the commercial market and their ability to offer alternative services going forward.

Any increase growth in the rural areas can be catered for by the existing transfer stations located around the district. These facilities transport waste back to the Broadlands Road Landfill. Any increase in volume of waste due to growth would mean an increase in operational cost as transfer Station skip bins will be emptied more often but this increase in cost will be offset by the extra revenue gained from the increased refuse volumes.

With Govt looking to provide support for the rural sector through product stewardship schemes for farm plastic's etc, there will be opportunity where a truck will be going on farm to collect this material, and this opens up the opportunity to collect additional materials and divert them form landfill.

Covid-19
The pandemic saw a short-term reduction in waste tonnage to landfill due to the closure of many businesses over this time. Council continued to provide waste collection services at the kerbside to reduce public health risk to the community. Refuse tonnage reflect previous years with a trend line that suggests that waste tonnages will increase around 1200 tonnes per year without further diversion options being introduced. (See below Graph)

Council will continue to review operational opening hours at district facilities to ensure that the community continues to have access to refuse and recycling opportunities. Operating hours will be determined based on cost-of-service provision versus service delivery to the community around ability to offload and divert material easily and without undue delay.

28.0 Meeting increased/changing demand

Increased/changing demand can be met by using a number of methods including.

- Non-Asset
- Capital
- Operational

29.0 NON-ASSET SOLUTIONS

- Product stewardship i.e. others undertaking recovery of products
- Landfill bans for some products (stumps, Haz waste E-Waste Tyres etc.)
- Education programs
- New Waste minimisation initiatives
- Operating hours
- Commercial Market
- Waste levy
- Community programs

30.0 CAPITAL EXPENDITURE DUE TO CHANGES IN DEMAND

Projected growth in the district will require new infrastructure, (see table 6-2 below) council already has a network of facilities around the district to cater for refuse disposal and recycling service provision, but Council will of course have to continue to extend the cell footprint at the Broadlands Rd landfill but this extension has been planned and was not been bought about by growth requirements.

Table 24-1: Capital Projects Required to Service Taupo District Growth

Project	Project Cost	Construction timing
Cell development	4,100,000	21/22 26/27 31/32 36/37
New transformer Broadlands Rd landfill	220,000	2024/25
Mangakino site upgrade	89,760	2025/26
Turangi shed extension	77,000	2024/25
Broadlands Rd sewer pipe upgrade	269,546	2027/28
Broadlands RTS Upgrade	4898195.00	2026/28
Litter and recycling bin renewals	1521384.00	2024/34
District facility renewals	1154293000	2024/34
Gas Flare Broadlands Rd landfill	26000000	2025/28
New kerbside collection contract bin supply	6363000.00	2025/34
Waste compactor Bin	38500	2024/25
Whareroa RT Upgrade	99615	2027/28

31.0 OPERATIONAL EXPENDITURE DUE TO CHANGES IN DEMAND

Growth in the district will increase operational costs but these costs will be offset by fees and charges revenue or rates. The service delivery cost for urban kerbside waste collection is set to change to rate funded service (depending on the consultation process with the community), so when the urban area grows properties contribute directly to the cost of the service.

With central government indicating the mandating of the collection of food waste, Council now should offer this service to the community in the urban areas. Currently councils kerbside service does incorporate the CBD and other light commercial areas, with some demand for this to increase to the other commercial areas due to having apartment buildings located within the commercial area.

Funding of this expenditure is discussed in the financial section of this asset management plan (section 9) and strategies for operation and maintenance of assets in section 4.

- Increase of Kerbside Collection area to cater for extension of urban areas.
- Additional recycling services

In 2022 Council undertook a Swapp survey that identified waste volumes and composition. This has enabled Council to understand the types of waste that are being disposed of and thus plan service delivery to help minimise the amount that goes to landfill. As Council operates the only municipal landfill, Council's weighbridge system, Atrax, can identify changes in waste tonnages on a daily basis. Data from the weighbridge is downloaded each night.

District RTS sites have now been set up to receive bulk recycling from the collections fleet in the peak busy to time to enable them to resume the service without having to travel back to Taupo to offload.

Table 24.2 - Primary composition of overall waste to landfill - August/September 2022

Primary composition of overall waste to landfill - August/September 2022	% of total weight	Tonnes per week	Tonnes per annum (indicative only)
Paper	7.5%	42 T/week	2,198 T/annum
Plastics	15.3%	86 T/week	4,494 T/annum
Organics	19.4%	109 T/week	5,705 T/annum
Ferrous metals	2.7%	15 T/week	781 T/annum
Non-ferrous metals	0.6%	3 T/week	162 T/annum
Glass	2.8%	16 T/week	822 T/annum
Textiles	6.1%	34 T/week	1,786 T/annum
Sanitary paper	4.0%	23 T/week	1,182 T/annum
Rubble & concrete	12.6%	71 T/week	3,706 T/annum
Timber	26.9%	151 T/week	7,883 T/annum
Rubber	1.1%	6 T/week	322 T/annum
Potentially hazardous	1.1%	6 T/week	311 T/annum
TOTAL	**100.0%**	**563 T/week**	**29,351 T/annum**

Organics and timber are the biggest waste streams currently entering the Landfill.

Timber is predominantly treated and arrives in mixed loads and in large skip bins from construction sites.

Currently the markets for treated timber off cuts locally is low as material usually comes with nails and large portion is older material. It is difficult to determine if waste wood is treated, but there are some developing markets . The issue of identification has undermined the reuse of wood locally. Council's main ability to impact this waste stream is by way of differential pricing incentives. But a market for materials must also be developed otherwise the outcome will be a stockpile of treated wood.

Central government increasing the waste levy will open up waste reduction opportunities in the future as the price to dispose to landfill increases.

Compostable materials		
Organics - Food waste	13.3%	58 T/week
Organics - Compostable greenwaste	5.4%	24 T/week
Rubble - New plasterboard	0.2%	1 T/week
Timber - Untreated/unpainted	5.2%	23 T/week
Subtotal	**24.1%**	**105 T/week**
TOTAL - Potentially divertable	**43.2%**	**189 T/week**

Central government has focused on reducing organic material to landfill as it is one of the main producers of Methane. Organic's is also relatively easy to divert at both the kerbside and at RTS sites where can be shredded and composted.

Council has in place a home composting subsidy program with also has a home composting education program provided by the local community gardens team.

3016 tonnes is kitchen and food waste which has the potential to be diverted but the results from food collection service delivery from other centres identifies that collection services will only collect around 40% of the available material.

This would equate to around 1206 tonnes that could be successful diverted from the waste stream if there was a district wide kerbside service. The collection of this material is mandated for Councils that have processing facility (Which Taupo has Two) by 2025.

Council will also look to work with commercial operators to investigate ways of diverting additional material.

Concrete and rubble diversion

Council has been successfully stockpiling and crushing concrete over the past twenty years, with a good local market that has taken this material for a number of uses. Council has been able to divert around 5000 tonnes per annum.

32.0 EFFICIENCY OF SERVICE

Council service delivery is measured by customer satisfaction surveys which need to match or better the levels identified in the service levels tables. Council also monitors environmental performance and customer complaints.

Facility hours for district transfer stations were negotiated with the local communities to make sure that operating times are supported the majority of users.

The level of fly tipping (illegal dumping) while a nuisance, is at a low level in most areas, but with increasing disposal prices council will need to step up its education program.

Council has set a goal of the cleanest district from a litter perspective and Council will continue to monitor litter levels throughout the district.

Council has experienced slight increases of litter when there is a change to the waste disposal fees at our district facilities, but this seams to decline rapidly once people are used to the fee change. To date fees and charges have been increasing gradually, but with the recent waste levy increase council has had to increase fees by some $40 form 2023. Council has signalled a 25% blanket increase for fees and charges across the council, and this will result in some litter pain in the lower socio-economic areas. Council will need to work hard on its education programs to make sure the community is aware what is able to be disposed of fee of charge (rate funded) at our facilities and at kerbside.

33.0 Infrastructure Acquired from Developers

Council will not acquire any Solid Waste assets from developers.

34.0 Community Expectations

Customers are primarily concerned with expansion of existing network services such as:

- Recycling and recovery options
- Facility operating hours
- Litter bin locations and serviceability
- Site safety
- Environmental protection
- Waste disposal affordability
- Environmental controls
- Public health
- Extension of kerbside collection areas

35.0 Tourism

The Taupo district sees a massive increase in visitor numbers over the summer peak period, and when holding major sporting events such as the round the lake challenge and the Ironman. This is considered, as we design assets for peak demand rather than permanent population.

For kerbside refuse and recycling collection, peak demands are dealt with by the contractor by having additional resources available. With a Wheelie bin service, peak demands, and the result waste and recycling volumes will be easier to quantify as the volume will be limited to the bin sizes and frequency of collections, with council providing a peak service over a 9 week period.

During the summer peak landfill and transfer stations show an increase in recyclable and recoverable items as well as an increase in refuse, district facilities change operational hours and increased volumes are dealt with by Councils contractors providing additional staff and equipment.

Council also increases its education campaign regarding services available so that visitors to the district are made aware of what is available to them.

Overall Waste is dependent on population as people create waste, but services still need to be provided to cater for the peak. Services such as the kerbside collection service still also need to drive all the streets in the urban areas as it can never be determined if the houses are occupied or not.

Table 24.3 - Per capita disposal of waste to landfill - 2008, 2013, 2017, and 2022

Taupō District - Per capita disposal of waste to landfill	2022	2017	2013	2008
Usually resident population - Taupō District	41,000	37,000	34,300	32,148
Tonnes per annum to landfill	29,351	24,901	18,118	19,700
Disposal of waste to landfill - tonnes per capita per annum	**0.716**	**0.673**	**0.528**	**0.613**

The per capita disposal of waste to landfill by residents of Taupō District in 2022 is calculated in Table 24.3 and compared to the same figures for 2008 and 2013, and 2017.

Based on tonnage data, per capita disposal of waste to landfill (including special wastes) has increased by 17% between 2008 and 2022, from 0.613 T/capita/annum to 0.716 T/capita/annum.

Taupō District disposal rates compared to other areas

Overall waste to landfill including special wastes (excluding cover materials)	Tonnes per capita per annum
Waimakariri District 2017	0.325
Invercargill City 2018	0.528
Taupō District 2013	*0.528*
Palmerston North 2017	0.545
Kāpiti Coast District 2017	0.546
Dunedin City 2018	0.554
Tauranga and WBOP District 2020	0.560
Napier/Hastings 2022	0.595
Wellington region 2016	0.608
Taupō District 2008	*0.613*
New Zealand (2021)	0.685
Taupō District 2017	*0.673*
Taupō District 2022	*0.716*
Hamilton City 2017	0.718
Queenstown Lakes District 2020	0.833
Auckland region 2016	1.053

The Taupō District per capita figure for landfilled waste, including special wastes, is compared to disposal figures from other local authorities previously surveyed by Waste Not Consulting. The figures in the table do not include cover

materials. The national average has been calculated using MfE's waste levy data [2] and Stats NZ usually resident population estimates[3].

The per capita disposal rate for Taupō District in 2022 was marginally higher than the New Zealand average for 2021. Areas with high tourism activity, such as Taupō and Queenstown tend to have higher per capita disposal rates than areas with lower levels of tourism activity. Tourism activity generates waste but tourists are not counted as usually resident by the census.

Higher disposal rates are also associated with areas with high numbers of holiday homes. This affects the per capita disposal rates, as non-permanent residents are not counted in the census as being usually resident. Approximately 40% of dwellings in Taupō District are not permanently occupied.[4] Users of holiday homes generate waste, but the occupants are not included in the population statistics.

[2] http://www.mfe.govt.nz/waste/waste-disposal-levy/monthly-levy-graph

[3]http://www.stats.govt.nz/browse_for_stats/population/estimates_and_projections/NationalPopulationEstimates_HOTPAt30Jun16.aspx

[4] Taupo District Growth Model 2015-2025LTP

7.0 RISK MANAGEMENT

7.1 Introduction

Why Risk Management? We are here to succeed; to deliver on the commitments we have made to our community. We undertake proactive risk management to understand the strategic and operational risks and opportunities we face, so that we may make informed decisions, enabling us to better achieve our objectives.

NZ councils have recently seen service disruptions from core infrastructure failures, the impacts of climate change with more frequent droughts and flooding, increasing pressures from growth, and financial pressures associated with all of these.

Councils are also grappling with meeting increasing standards and uncertainty regarding changes, such as the previously proposed (and partially enacted) resource management reforms and the Affordable Waters Reform programme.

As we seek to achieve our objectives and meet our communities' needs and expectations in an increasingly complex environment, we need to apply a structured approach to understanding the risks we face and how to manage these.

Taupō District Council's (TDC) seeks a culture where risks are addressed with transparency and inclusiveness. We can achieve this by understanding our Risk Appetite1 and this policy, and applying our Risk Management Framework.

Council is committed to managing its risks in a proactive and constructive manner. We integrate sound risk management principles and practices into our day-to-day management. We are risk aware, not risk averse – we are willing to accept a measure of controlled risk to achieve our objectives.

We all have a responsibility to understand our role in managing risk so that we can safeguard our people, assets, finances, property and reputation and this policy highlights the key roles and responsibilities within our risk management system.

This Risk Management Policy is supported by TDC's Risk Appetite and Risk Management Framework which are key elements of our risk management system.

Figure 1 – Key elements of TDC's risk management system.

Objectives

By proactively managing risks and developing a culture of risk-based decision making we create a no surprises approach. Understanding our risks and communicating these from the outset enables Elected Members and management to make informed decisions, helping us to deliver our strategic goals within our **Risk Appetite**.

By identifying and managing risks we aim to deliver our work in manner that achieves the objectives outlined in Figure 2.

Figure 2 – Taupō District Council's Risk Management Objectives.

Principles

The guiding principles of risk management at TDC are:

1. **Risk management is critical for achieving our objectives** as an enabler of opportunity and underpins decisior making. It is applied across all TDC activities at all levels to ensure everyone's knowledge views, and perceptions can be considered.

2. Risk management **aims to protect our resources** (people, property, financial, environmental and information) and reputation.

3. We escalate potential risks where appropriate as we know that our leaders have our backs. We know it is saf to **speak up**.

4. Risk is to be **minimised to acceptable levels**, ideally within our **Risk Appetite**.

5. Risk management is responsive to TDC's dynamic operating environment; **there is to be regular monitoring o the risk environment** using the best available information. Potential impacts on our objectives is to be identified, assessed and treated.

6. **Risk management is to be methodical, structured** and follow the principles of **ISO 31000:2018 Risk Management – Principles and Guidelines**. This enables us to compare risks and prioritise our management o these.

7. Proactive risk management is an opportunity to do better, and if applied well **will enable continuous improvement**.

8. **Employees are to familiarise themselves** with this **Policy** and the **Risk Management Framework** so they understand their responsibilities and know how to effectively contribute towards risk management at TDC.

Risk Management Framework

Staff give effect to this Risk Management Policy by utilising the processes described in our **Risk Management Framework** which outlines:

- how risks are identified, analysed and evaluated;
- how risk response plans are designed and prioritised; and
- how risks are reported, escalated, and communicated.

Roles & Responsibilities

All staff have a role to play to help us achieve our objectives through proactive risk management, and the table below outlines Elected Member and staff responsibilities.

Council	Overall responsibility and accountability for ensuring risks are mitigated resides with the Council as the governing body. Council: • Identifies Key Risks It has however delegated some activities to the Risk and Assurance Committee and delegated power to act on matters relating to audit, risk management and internal control practices. The Risk and Assurance Committee has been delegated review and approval of Council's Risk Management Charter (now Framework), which includes determining Council's risk appetite[2]. The Council's role is risk governance.
Risk & Assurance Committee	Council has delegated these risk management responsibilities to its Risk and Assurance Committee including: • Adopt Council's Risk Management Policy and Framework. • Determine Council's Risk Appetite. • Review and monitor the effectiveness of Council's risk management framework and internal control systems; • Monitor the Council's external and internal audit processes. For further details refer to the Risk and Assurance Committee Terms of Reference. • Risk and Assurance also provide oversight of Strategic Risk management and control.
Chief Executive and Executive Team	• Ensure Council has an effective risk management process in place. • Endorse and champion the application of the risk management policy and framework. • Advocate awareness of interdependency between strategy and risk. • Take ownership of risks in area of responsibility and ensure such risks have management plans. • Risk Owners for Strategic Risks. • Risk Owners for escalated risks that reside in the Enterprise Risk Register i.e. corporate and operational risks that sit outside of Council's **Risk Appetite.** • Oversight of corporate and operational risk management.
Enterprise Leaders	• Endorse and champion the application of the risk management policy and framework within their business unit. • Manage key risks that that may impact the achievement of their business unit's objectives and sit within Council's **Risk Appetite**.
	• Determine at what frequency their business unit's risks should be monitored. Risks should be monitored as frequency as needed to keep them controlled to as low as reasonably practicable. • Report on and be accountable for the delivery of risk management activities within their business unit. • Advocate awareness of interdependency between strategy and risk. • Responsible for escalating to the Executive risks that can't be controlled to within the Council's **Risk Appetite**.
Supervisors & Team Leaders	• To manage operational risks effectively in their particular business unit and capture this in a **Risk Register**. • To monitor and review risks at appropriate intervals. • To record and report on decisions and actions relating to these risks.

Risk Manager	• Develop and review the Risk Management Policy and Risk Management Framework and supporting processes in accordance with best practice.
	• Provide advice and support to Executive Team and Enterprise Leaders on the identification, analysis and prioritisation of risks.
	• Coordinate timely delivery of relevant risk management information including:
	  ○ reporting strategic risks management to the Risk and Assurance Committee.
	  ○ reporting of enterprise risks and management to the Executive Team.
	• To deliver risk management awareness programme and provide risk management training to Officers and Members.
	• Coordinate awareness of interdependency between strategy and risk.
	• Advocate awareness of interdependency between strategy and risk.
	• Design and implement an insurance strategy and programme

All Staff	• Proactively identify and report risks using the processes described in our **Risk Management Framework**. • Actively support and contribute to risk management initiatives.

Council's Audit & Risk Committee oversees the governance of a Risk Management Programme within the Taupō District Council. Risk Management is continuously being integrated into Councils culture, philosophy, practices, activities and plans rather than being viewed or practised as a separate programme.

The accountability for the management of risk is not removed from the specific activity managers and the Senior Leadership Group or those responsible for the management of assets and this is viewed as a collaborative process between governance and management.

The high-level assessment of critical assets is done and now needs to be coordinated with the other assets to determine true criticality, this work is an improvement task and is ongoing.

Risk and Solid Waste

Due to the high level of community involvement with the Solid Waste services and Solid Waste infrastructure, Council Staff responsible for the cost centre are "paranoid" about Health and Safety.

Across NZ the commercial service delivery sector has learnt harsh lessons in the past, and are now far more proactive in avoiding harm.

Council staff are now part of the discussion when it comes to Health and safety and regularly attend toolbox and pre tart meetings.

With the possible role out of a new Bin service, there is the potential to receive negative feedback, due to the change in service, pricing issues or incorrect bin allocations, all of which will be considered as par of the roll out.

Solid Waste Assets

These risk identification process has identified components within the TDC Solid Waste network that may be vulnerable to seismic, flood or volcanic events and the impact of failure of these assets. The critical assets include the Landfill and all district Transfer stations.

TDC is also a member of the Waikato Utility Lifelines group and the wider Waikato Civil Defence and Emergency Management Group.

The Broadlands Rd operational contract includes after-hours emergency response for site issues. After hours staff (the Tauranga call centre) receives calls and forward emergency calls directly to the contractor who are required to respond in a certain time.

Asset managers are also informed of emergency calls.

3 TDC Risk Management Framework

GREAT LAKE TAUPŌ
Taupō District Council

Risk Assessment Criteria

			Low Criticality		Moderate Criticality	High Criticality	
					Consequence	Major	Extreme
		Health & Safety	Ailments Not Requiring Medical Treatment	Minor Injury	1 Serious Injury Causing Hospitalisation or Multiple Minor Injuries	1 Life Threatening Injury or Multiple Serious Injuries Causing Hospitalisation	1 Death or Multiple Life Threatening Injuries
		Reputation	Self-improvement review required	Scrutiny required by internal committees or internal audit to prevent escalation	Scrutiny required by external committees or the OAG	Intense public, political and media scrutiny evidenced by front page headlines and/or television coverage.	Royal Commissions/Parliamentary Enquiries
		Financial	1% of Budget	3-6% of Budget	> 6% of Budget	> 10% of Budget	> 25% of Budget
		Organisational Objectives - Strategic Plan	Very little consequence to achievement of plan	Would require some adjustment to achieve plan	Would require significant adjustment to achieve plan	Would threaten achievement of objectives	Would stop achievement of strategic plan
			1	2	3	4	5
			Insignificant	Minor	Moderate	Major	Catastrophic
Likelihood	Expected in most circumstances. Has occurred on an annual basis at the Taupo District Council in the past or circumstances are in train that will cause it to happen	A	Almost Certain	L	M	H	E	E
	Has occurred in the last few years at the Taupo District Council or has occurred recently in other similar agencies or circumstances have occurred that will cause it to happen in the short term	B	Likely	L	M	H	H	E
	Has occurred at least once in the history of the Taupo District Council or is considered to have a 5% chance of occurring in the current planning cycle	C	Possible	L	M	M	H	H
	Has never occurred at the Taupo District Council but has occurred infrequently in other similar agencies or is considered to have a around a 1% chance of occurring in the current planning cycle	D	Unlikely	L	L	M	M	H
	Exceptional circumstances only. Is possible but has not occurred to date in any similar agency and is considered to have very much less than a 1% chance of occurring in the current planning cycle	E	Rare	L	L	L	M	M

Extreme	Unacceptable	Must be given immediate senior management attention.	Detailed Action Plan	SLG responsibility
High	Active Management	Must have considerable management to reduce to as low as reasonably practicable (ALARP)	Detailed Action Plan	Activity managers
Moderate	Tolerable	Risks should be managed and monitored to reduce to as low as reasonably practicable (ALARP)	Specific procedures to manage and monitor	
Low	No Action Required	Manage and monitor with normal operational management practices	Manage by routine procedures	

*Risks are recorded in and monitored using Promapp Risk Module the ratings recorded above are used to calculate the inherent and residual risk scores

7.2 Risk Management Process

The risk management process is an integral part of good management practice. It is an iterative process of continuous improvement that is embedded into existing practices or business improvement.

The main elements of the risk management process to be used at the Taupō District Council are as follows and reflect the risk management standards ISO 31000.2009 and AS/NZS 4360:2004.

a) Communicate and consult

Communicate and consult with internal and external stakeholders of Council as appropriate at each stage of the risk management process and concerning the process as a whole.

b) Establish the context

Establish the external, internal and risk management context in which the rest of the process will be undertaken. Criteria against which risk will be evaluated should be established and the structure of the analysis defined.

c) Identify risks

Identify where, when, why and how events could prevent, degrade, delay or enhance the achievement of asset's objectives.

d) Analyse risks

Identify and evaluate existing controls. Determine consequences and likelihood and hence the level of risk. This analysis should consider the range of potential consequences and how these could occur.

e) Evaluate risks

Compare estimated levels of risk against pre – established criteria and consider the Balances between potential benefits and adverse outcomes. This enables decisions to be made about the extent and nature of treatments required and about priorities.

f) Treat risks

Develop and implement specific cost-effective strategies and action plans for increasing potential benefits and reducing potential costs

g) Monitor and review

It is necessary to monitor the effectiveness of all steps of the risk management process. This is important for continuous improvement. Risks and the effectiveness of treatment measures need to be monitored to ensure changing circumstances do not alter priorities. Council staff are involved in a continuous program of risk assessment at district facilities due to the high level of public interface.

7.3 Council Funding for Risk

Council looks to provide funding for disaster recovery through a separate reserve. It appropriates funding each year to a Disaster Recovery Fund reserve to enable access to ready cash in the event of a natural disaster. This is intended to assist reinstatement and to finance any short term needs in the time between any disaster and the recommencement of services.

Secondly the TEL Fund was established in September 1995 when TDC sold its investments in Taupō Electricity Ltd and Taupō Generation Ltd. The use of that sale capital and subsequent investment income generated each year are included in Council's Treasury Management Policy. One requirement of that policy is that the portfolio and funds are managed in a manner that reflects their potential utilisation as a disaster recovery fund in the event of a natural disaster within the Taupō district.

With these two funding mechanisms in place Council considers it is prudently but effectively managing the risk of being able to fund both short and long term needs with respect to potential natural disaster and subsequent recovery operations in the district.

7.4 Lifelines Risk Assessment

TDC is a member of Waikato utility Lifelines Group. This process aims to identify components within the TDC Solid Waste network that may be vulnerable to seismic, flood or volcanic events and the impact of failure of these assets.

7.5 Risk Register

The specific asset risk register (see following) identifies risks, the consequence of the risk, the existing controls in place, treatment options and the level of risk to the asset as assessed and updated by Council Officers. A possible improvement to the register is to provide each treatment options with an associated cost and added to the risk register; however, these are yet to be costed by TDC.

8.0 Risk Classification Matrices

9.0 LIKELIHOOD

Likelihood scale for consideration based on **ANZS 4360** is as follows.

Level	Descriptor	Damage / Failure Indicative Frequency
A	Almost Certain	Once per year or more frequently
B	Likely	Once every three years
C	Possible	Once every ten years
D	Unlikely	Once every thirty years
E	Rare	Once every 100 years
N	Almost Impossible	Once in 10,000 years

Table 4: Risk Likelihood

10.0 CONSEQUENCE

A consequence scale as a result of a risk event occurring based on **ANZS 3460** is shown for consideration as follows.

Level	Descriptor	Description
5	Catastrophic	Extreme Impact of damage or failure
4	Major	High impact of damage or failure
3	Moderate	Medium impact of damage or failure
2	Minor	Low impact of damage or failure
1	Insignificant	Very little impact of damage or failure
N	Negligible / Nil	Assessment is Nil

Table 5: Risk Consequence

11.0 RISK RATING MATRIX

With both likelihood and consequence scales in place a qualitative risk analysis matrix/level of risk can be determined.

	Consequences

Likelihood	N	1	2	3	4	5
A	N	L	M	H	E	E
B	N	L	M	M	H	E
C	N	L	L	M	M	H
D	N	L	L	L	M	H
E	N	L	L	L	L	M
N	N	N	N	N	N	N

Table 6: Risk Matrix

The rating legend for the matrix, in this example, can be summarized as follows
E = Extreme risk
H = High risk
M = Moderate risk
L = Low risk
N = Negligible risk approaching nil / no risk

12.0 RISK MITIGATION MEASURES

High to Extreme risk would normally involve more detailed studies, action plans and management responsibility specifically assigned.

Moderate risk would be managed by monitoring or response procedures and management responsibility specified.

7.6.4.1 Summary of Identified High Risks

This is a summary of the high risks; the complete list is included as table 7-5.

Asset Risk	The Risk	Mitigation Measures
Commercial competition	Commercial operators take control of waste stream and divert waste (Gate Revenue) away from the Broadlands Rd landfill. Contractors focused on tonnes to landfill thus negating Councils Waste minimisation and management plan objectives.	Contract monitoring, performance measures, possible commercial agreement Budget reviews Pricing levels set to make sure that is not viable for competitors to compete
Public safety non-compliance / occupational health and safety non-compliance	Health risk due to access to contaminated sites, heavy machinery movements, access to recycling areas that are hazardous (steel pile, conc pile, waste wood pile and glass area), potential for acceptance of hazardous materials (Bombs, Haz waste , Flammable material)	Appropriate signage on hazard areas, appropriate signage as to what can be dropped off adequate training provided, adequate PPE for staff)

Asset Risk	The Risk	Mitigation Measures
Volcanic eruption	We have active volcanoes at the end of the lake with recent eruptions. Ash could affect the operation of facilities and collection vehicles	Suspend collections and close facilities until ash is removed or it is safe to operate. Schedule additional collections runs and extend operating hours of facilities after the event. If the landfill was closed then we could truck material to an alternative disposal site

Table 7-7: Identified High Risks

13.0 Critical Assets

The Solid Waste cost centre not only provides assets such as the Broadlands Rd landfill and district transfer stations it also provides a number of non-asset-based services, the most important being the district refuse and recycling contract that provides kerbside collection to urban areas in the district.

The risk assessment has identified a number of scenarios that could possibly mean that the landfill and or RTS sites may be unable to receive material.

The solid Waste facilities and the Broadlands Rd landfill can act as stockpile points if an emergency failure was to occur. The Broadlands Rd transfer pit can be utilised to transport waste out of the district to other landfills in the short term. The refuse and recycling collection can be altered to alternative days and the materials collected can also be changed to cater for whatever the failure might be. In a recent flooding incident, residents were notified of a drop off point that materials would be collected from which enabled the service to continue.

Refuse and Recycling collection frequencies can be altered depending on access issues and all material could be collected in the one truck, i.e. postponing recycling in the short term if the nature of the event meant that service delivery was severely compromised.

In the recent Covid-19 outbreak, waste collection and disposal were identified as essential services to maintain public health. The service delivery was altered to only collect waste from the kerbside and district facilities only accepted waste in pre-paid bags to reduce the handling of waste materials. All recycling and other waste related services were stopped until it was deemed safe enough for them to resume.

Council's facility and service delivery contractors do have additional resources available on call to provide for collection and site operations.

The Broadlands Rd landfill has a water cart and a water reservoir in case of fire along with the provision of an infrared camera which is monitored remotely.

The landfill liner system providing containment at the landfill has been designed to allow for some movement. The repair of any liner damage would need to be worked through with Councils peer reviewer for the site and the regional Council.

If there was volcanic ash covering facilities, we may have to close them until after the event or work to remove the ash so that facilities could continue to operate. Collection operations would be dependent on level of ash and whether it was safe for the operators.

Households may have to stockpile waste until facilities can reopen, then Council could organise additional collection runs to deal with the volumes.

Large volumes of ash could be stockpiled, preferably on farmland as it would not need to go to landfill, Council would have to negotiate with landowners.

During the tender process for any Council contract all contractors must show that they have become an approved contractor in regard to health and safety which requires them to have Site Safe or equivalent accreditation.

Landfill fires

Landfill fires are a common risk for disposal facilities especially in the winter months where people are looking to dispose of fire ash. This material can come to facilities on the back of trailers or in refuse bags. Staff are trained to look for hot materials and council undertakes regular landfill fire training. The other cause of landfill fires that has arisen over the last couple of years is Lithium-ion batteries as they tend to explode if compressed or damaged. Council has provided battery collection areas at most of its transfer stations to avoid these batteries going to landfill.

A fire at the Broadlands Rd landfill may require that refuse is not able to be disposed at the site while the fire is being handled. The onsite tipping pit can be used to load out bigger vehicles for bulk load transfer to an alternative disposal site. Waste from the five transfer sites can also be transported to an alternative site. The closest alternative site would be the Rotorua landfill and council would have to negotiate a short-term disposal agreement.

7.7 Legislation requirements

The waste minimisation Act requires that a Waste Assessment is completed prior to the development of Councils WMMP. The Waste assessment provides the background data to the strategy and the strategy will provide details as to how Council will spend Waste minimisation levy funds, reporting on this spend is an annual requirement. Reporting on resource consents for closed and operating landfills is scheduled through a consultancy firm who provides monitoring and analysis services.

Waste Minimisation Act also requires that waste tonnages are reported to Mfe on a monthly basis as this details forms the basis of the waste levy payment.

The landfill operational consent requires that site operations and new cell builds are overseen by a peer reviewer who makes sure that best practise is being implemented. The peer reviewer also provides advice on problems arising.

The consent also requires a contingency plan for site operations, and this document can be found in Objective.

Illegal dumping could potentially increase with the increase in the governments waste minimisation levy as the price to dispose of waste at district rises by $60 over the next 4 years. Council has put additional funds aside in anticipation of an increase in material to be collected.

Taupo District Council

Asset Management Plan

Risk Register

Division:	Works	Compiled by:	Brent Aitken	Date:	6/9/5
Asset:	Solid Waste	Reviewed by:		Date:	

NATURAL RISKS

Asset Risks	The risk: What can happen and how it can happen	The consequences of an event happening		Adequacy of existing controls	Consequence rating	Likelihood rating	Level of risk	Risk priority
		Consequences	Likelihood					
Earthquake	**Landfill or Transfer Station structures damaged due to earthquake due to:** Fill Slumping	Moderate	Unlikely	PE (see Note 1)	3	D	L	
	Liner Failure	Major	Unlikely	PE (see Note 1)	4	D	M	
	Access to disposal sites blocked, refuse unable to get to disposal sites	Major	Unlikely	PE (see Note 2)	4	D	M	
	Surrounding environment polluted due to Leachate loss from pond or lined landfill cell	Major	Unlikely	PE (see Note 3)	4	D	M	
	Compaction Plant at RTS damaged	Moderate	Unlikely	E	3	D	L	
	Weighbridge damaged and unable to weigh	Moderate	Unlikely	E	3	D	L	
	Computer system damaged and unable to record transactions	Minor	Unlikely	E	2	D	L	
	Refuse collection unable to proceed	Major	Unlikely	E (see note 2)	4	D	M	
	Damage to Closed landfills	Moderate	Unlikely	E (see note 4)	3	D	L	
Volcanic Eruption	Refuse collection unable to proceed	Major	Unlikely	E (see note 2)	4	D	M	
	Potential for structural damage to RTS and Landfill buildings	Moderate	Unlikely	E	3	D	L	
Ash fall	Refuse collection unable to proceed	Minor	Rare	E (see Note 2)	2	E	L	

Asset Risks	The risk: What can happen and how it can happen	The consequences of an event happening Consequences	Likelihood	Adequacy of existing controls	Consequence rating	Likelihood rating	Level of risk	Risk priority
	Potential for structural damage to RTS and Landfill Buildings	Moderate	Rare	E	3	E	L	
	Access to disposal sites blocked, refuse unable to get to disposal sites	Moderate	Rare	E	3	E	L	
	Weighbridge damaged and unable to weigh	Moderate	Rare	E	3	E	L	
	Compaction Plant at RTS damaged	Moderate	Rare	E (see note 5)	3	E	L	
Lahar	Refuse collection unable to proceed	Minor	Rare	E	2	E	L	
	Access to disposal sites blocked, refuse unable to get to disposal sites	Minor	Rare	E	2	E	L	
Flooding	Refuse collection unable to proceed	Moderate	Unlikely	E	3	D	L	
	Access to disposal sites blocked, refuse unable to get to disposal sites	Moderate	Unlikely	E	3	D	L	
	Surrounding environment polluted due to Leachate loss from pond or lined landfill cell	Major	Unlikely		4	D	M	
	Fill Slumping	Moderate	Unlikely	E	3	D	L	
	Liner Failure	Major	Unlikely	E	4	D	M	
	Compaction Plant at RTS damaged	Moderate	Unlikely	E	3	D	L	
	Weighbridge damaged and unable to weigh	Minor	Unlikely	E	2	D	L	
	Computer system damaged and unable to record transactions	Minor	Unlikely	E	2	D	L	
	Damage to closed Landfills	Moderate	Unlikely	E	3	D	L	
Tsunami	Potential for structural damage to RTS and Landfill buildings	Moderate	Rare	E	3	E	L	
Fire	Landfill fire would restrict dumping and close landfill	Major	Possible	PE (see note 6)	4	C	M	
	Potential for structural damage to RTS and Landfill buildings	Moderate	Possible	E	3	C	M	
	Fill Slumping	Moderate	Possible	E	3	C	M	
	Liner Failure	Major	Unlikely	E	4	D	M	
Lightening	Compaction Plant at RTS damaged	Minor	Rare	E	2	E	L	
		Minor	Rare	E	2	E	L	

Asset Risks	The risk: What can happen and how it can happen	The consequences of an event happening Consequences	Likelihood	Adequacy of existing controls	Consequence rating	Likelihood rating	Level of risk	Risk priority
	Weighbridge damaged and unable to weigh Computer system damaged and unable to record transactions	Minor	Rare	E	2	E	L	
High winds	Potential for structural damage to RTS and Landfill buildings	Minor	Unlikely	E	2	D	L	
	Litter strewn across a wide area	Minor	Almost Certain	E (see note 7)	2	A	M	
Land slide/slip	Fill Slumping	Moderate	Possible	E	3	C	M	
	Liner Failure	Major	Possible	E	4	C	M	
	Refuse collection unable to proceed	Minor	Rare	E	2	C	L	
	Access to disposal sites blocked, refuse unable to get to disposal sites	Moderate	Rare	E	3	E	L	
Tomo's	Fill Slumping	Moderate	Unlikely	NC	3	D	L	
	Liner Failure	Major	Unlikely	NC	4	D	M	
	Potential for structural damage to RTS and Landfill buildings	Minor	Unlikely	NC	2	D	L	
Geothermal activity	Fill Slumping	Moderate	Possible	NC	3	C	M	
	Liner Failure	Major	Possible	NC	4	C	M	
	Potential for structural damage to RTS and Landfill buildings	Minor	Unlikely	NC	2	D	L	
Pandemic	Service impeded	Major	Possible	C	3	C	M	

EXTERNAL RISKS

Asset Risks	The risk: What can happen and how it can happen	The consequences of an event happening Consequences	Likelihood	Adequacy of existing controls	Consequence rating	Likelihood rating	Level of risk	Risk priority
War	Potential for structural damage to RTS and Landfill buildings	Moderate	Almost Impossible	NC	3	N	N	
	Refuse collection unable to proceed	Major	Almost Impossible	NC	4	N	N	

Asset Risks	The risk: What can happen and how it can happen	The consequences of an event happening		Adequacy of existing controls	Consequence rating	Likelihood rating	Level of risk	Risk priority
		Consequences	Likelihood					
	Access to disposal sites blocked, refuse unable to get to disposal sites	Major	Almost Impossible	NC	4	N	N	
Terrorism	Potential for structural damage to RTS and Landfill buildings	Minor	Rare	NC	2	E	L	
	Refuse collection unable to proceed	Moderate	Rare	NC	3	E	L	
	Access to disposal sites blocked, refuse unable to get to disposal sites	Moderate	Rare	NC	3	E	L	
Protests/Riots	Refuse collection unable to proceed	Moderate	Rare	NC	3	E	L	
	Access to disposal sites blocked, refuse unable to get to disposal sites	Moderate	Rare	PE	3	E	L	
Vehicle accident	Refuse collection unable to proceed	Moderate	Likely	E	3	B	M	
Contractual obligations not fulfilled by external parties	Delayed works programme potentially resulting in: Refuse being left in streets	Minor	Almost Certain	E	2	A	M	
	Landfill cells not being built in time for refuse disposal	Major	Unlikely	E	4	D	M	
Excessive costs to maintain, renew or create assets	Excessively high maintenance and construction costs due to having to import material (Clay liners, HDPE plastics drainage aggregate) from outside the district resulting in less work achievable within budget	Moderate	Unlikely	PE (see note 8)	3	D	L	
Lack of contractors to carry out works	Loss of competitive contract rates and increased contract rates due to having to import contractors from outside the district	Moderate	Unlikely	E	3	D	L	

PHYSCIAL RISKS

Asset Risks	The risk: What can happen and how it can happen	The consequences of an event happening		Adequacy of existing controls	Consequence rating	Likelihood rating	Level of risk	Risk priority
		Consequences	Likelihood					
Inadequate design, construction or maintenance of asset	Damage to landfill or RTS buildings and or compactors with possible Health and safety issues	Major	Possible	E	4	C	M	
	Major failure of landfill liner resulting in pollutants entering the surrounding environment	Major	Possible	E	4	C	M	
Premature asset failure	Failure due to not predicting growth rates accurately and refuse fill rates	Major	Unlikely	E	4	D	M	

OPERATIONAL RISKS

Asset Risks	The risk: What can happen and how it can happen	The consequences of an event happening Consequences	 Likelihood	Adequacy of existing controls	Consequence rating	Likelihood rating	Level of risk	Risk priority
Commercial Competition	Privately run landfill or RTS opened in the district or close by taking refuse from Broadlands and thus revenue	Major	Possible	NC	4	C	M	
	Privately run landfill subsidising transport costs for waste to go out of the district, thus loss of revenue	Major	Possible	NC	4	C	M	
	Kerbside refuse collectors obtaining a monopoly in the collection market thus controlling prices to the community	Moderate	Likely	PE (see note 9)	3	B	M	
	Kerbside refuse collection contractors focused on tonnes to landfill and thus making Council recycling targets unachievable	Moderate	Almost Certain	PE (see note 9)	3	A	H	
Gas extraction not meeting required levels to enable reduction in emissions cost	Due to the landfill cover, the site does not produce enough gas as it is venting, and this impacts the amount of emission credits that Council has to pay for.	Major	Possible	PE (see note 15)	3	B	H	
Legislative non-compliance	E.g. Not obtaining Resource Consent, not abiding by LGA.	Major	Unlikely	E	4	D	M	
	Major Resource Consent Breach.	Major	Possible	E	4	C	M	
	Not achieving targets set in MFE guidelines or Council	Moderate	Possible	PE (note 10)	3	C	M	
	Waste strategy	Moderate	Possible	E	3	C	M	
	Not achieving annual plan and or LTCCP objectives							
Failure to identify all assets condition and value	Won't have in place an optimum maintenance or renewal programme and budget. Rating for renewal incorrect	Moderate	Possible	PE	3	C	M	
Incorrect assessment of financing required to renew or create assets	Over spent budget and/or delayed project completion	Minor	Likely	E	2	B	M	
Community expectation not met	Communities faith and trust of Council lost	Moderate	Likely	PE	3	B	M	
Loss of Council reputation	Communities faith and trust of Council lost	Moderate	Likely	PE	3	B	B	
Public safety non-compliance	Public safety put at risk	Major	Likely	PE (see note 11)	4	B	H	
	Health Risk due to access to contaminated sites	Major	Likely	PE	4	B	H	

Asset Risks	The risk: What can happen and how it can happen	The consequences of an event happening Consequences	Likelihood	Adequacy of existing controls	Consequence rating	Likelihood rating	Level of risk	Risk priority
	Heavy machinery movements	Major	Likely	PE	4	B	H	
	Access to recycling areas that are hazardous (steel pile, conc pile, waste wood pile, glass area)	Major	Likely	PE (see note 12)	4	B	H	
	Potential for acceptance of Hazardous materials (bombs, Haz waste, flammable materials)	Major	Likely	PE	4	B	H	
Loss of electronic data/information on assets	No access to data – potential for work to be delayed	Minor	Possible	PE (see note 13)	2	B	M	
	Loss of data– data will have to be recollected and work significantly delayed	Minor	Rare	PE (see note 13)	2	E	L	
Loss of Council employees from high staff turnover	Loss of local knowledge both present and historical	Moderate	Likely	PE (see note 14)	3	B	M	

Notes:

1. Landfill Liner designed for base movement
2. Refuse can be held at local RTS or moved to site that is not affected, community notified not to place refuse out for collection and alternative disposal sites used
3. Depending on severity, Leachate could be contained within bunding and piped, Ground Water in the vicinity of the landfill is not potable due to geothermal influence
4. Closed landfills have operating closure consents requiring mitigation and repair of damage, funding coming from TEL fund.
5. Transfer stations can still operate by placing uncompacted refuse into trucks and transporting to disposal site.
6. Have a water truck on site, site has an emergency evacuation procedure, will monitor potential harmful effects of smoke for the surrounding area and evacuate if necessary, firefighting water storage pond and infrared camera listed as projects in the LTP.
7. Contractor employs litter fences and has staff available for litter clean up.
8. Review budgets annually, although can not allow for things like petrol increases during the year, which could affect product use choices.
9. Potentially controlled by bylaw or licensing provisions
10. Commercial operators may not be aligned with waste strategy and thus Council may not be able to achieve targets set
11. Sites are kept up with best practise for operational health and safety
12. Council still wants to encourage reuse of materials at disposal sites and thus will run the risk of injury to the public when they are among this material, signage identify that they do so at their own risk is displayed.
13. Daily computer back-ups, virus protection software, some data in hard copy
14. Asset Management Plans, documentation
15. Council currently has an exposure to the ETS, which increase or diminishes due to the cost of emissions and the amount of waste disposed to landfill. The ETS was not envisaged as an issue in the development of the landfill, but the pumice cover does allow venting of Methane due to its porous nature. If Council invests in a gas flare it will be imperative that we are able to meet certain gas emission reduction targets otherwise we have invested in destruction of emissions but won't be able to reduce the operational costs. Council will have to ensure that any design of the gas wells and extraction system take into account these factors as part of the overall design.
16. The current waste collection contract incorporates both bagged waste and wheelie bin waste and this allowed for waste to be collected and removed at kerbside which also removed the public health risk. Council also allowed waste that was in pre-paid bags to be dropped off at disposal facilities. As the bags were pre-paid, it meant that there was no transaction process as bags were counted only, which resulted in rural properties and urban properties having the ability to get rid of waste. Initially under Level 4, residents were asked to stockpile recyclables, but in hindsight, due to the length of Level 4, any new advice would be to dispose of any recyclables in the waste stream to avoid the build up of materials at properties which could in the long term impact public health.

Council's asset management working group have gone through a process where critical assets have been identified and documented, the main critical asset for Solid waste is the Broadlands Rd landfill. If the landfill were to become compromised Council could use the domestic disposal pit to load trucks to enable waste to be transported to an alternative disposal site, the closet being either the Envirowaste site north of Hamilton or HG Leach's landfill in the Coromandel.

Commercial competition

As Council has a mixed funding model for the provision of waste services (rates and user charges) council does compete in the market to provide waste services such as landfill disposal and kerbside collection of refuse.

Currently waste collected by council or commercial market provider's ends up for disposal at the Broadlands Rd landfill. Council uses part of the revenue from gate charges to fund waste minimisations activities in the district. There are alternative disposal sites in New Zealand which could take the waste disposed at Broadlands Rd. Council must use the mix of rate funds and user changes to keep the disposal fee below the level where a competitor could, handle, transport and dispose at an alternative site. If the market considered that they could achieve this outcome and charge a lower price for disposal as a gate fee then there is the potential that Council would be left running a disposal facility but with no waste to cover the operational costs. Rotorua Council put themselves in this predicament recently which has meant that had to close their landfill and now the waste stream is dominated by commercial operators, reducing their council's ability to influence waste minimisation.

To safeguard the revenue stream into the Broadland Rd Landfill, Council has had to enter into a commercial arrangement with the biggest operator in the district, which gives them a differential pricing arrangement for waste disposal. As they are also the contract providers for landfill operation and kerbside collection Council has been able to lock in this agreement for the term of their contracts.

As the Broadlands Rd landfill has an additional twenty years of disposal space after the 2027 consent expiry date Council will again have to negotiate with the market at the end of these contract terms.

Council does have the ability to go to fully rates funded service delivery, for the kerbside collection service and this would secure 5000 tonnes of waste. Commercial operators are not going to compete with the district transfer stations as the waste volumes are too small to warrant the capital investment, so the main risk is the Broadlands Rd site and the revenue stream it creates.

Due to the geographical isolation of Taupo and the distance to the nearest large disposal facility (North of Hamilton) and Councils ability to alter fees with the support of partial rate funds it is considered that as long as Council continues to monitor the cost of transport and disposal costs at alternative facilities council will be able to avoid waste flight.

INADEQUATE RESOURCING Short term focus and long term uncertainty due to political swings in strategy and objectives				
TREATED RISK **Moderate** (Risks to be actively managed and monitored with specific procedures) UNTREATED RISK **High** (Untolerable. Requires management over and above standard operational procedures to reduce the risk))		**NEGATIVE IMPACTS ON ORGANISATION** • Potential to impact of long term financial sustainability • May cause result in on compliance with legal and regulatory obligations • Potential to fail to meet customer & ratepayer commitments	**TREATMENT MC00102** Modification of the risk by way reduction of the likelihood of the risk occurring by the completion of Long Term and Annual Planning in accordance with sections 93 & 95 of the Local Government Act 2002.	**TREATMENT/RISK STATUS** Long term planning id being undertaken as per the requirements of the Local Government Act and these are expected to ensure that adequate resources are available to deliver the policies and outcomes required by the community and is nearing completion Within Council's risk appetite with no breaches of legal compliance and strategic goals are being achieved and no incidents of reputational damage recorded.
UNTREATED LIKELIHOOD	Likely			
UNTREATED SEVERITY	Catastrophic			
TREATED LIKELIHOOD	Unlikely			
TREATED SEVERITY	Catastrophic			

HEALTH AND SAFETY AT WORK ACT 2015 Potential liabilities for elected representatives if all reasonably practical steps are not taken to manage health and safety risks				
TREATED RISK **Moderate** (Tolerable but requires risks to be actively managed And monitored with specific procedures) UNTREATED RISK **High** (Untolerable. Requires management over and above standard operational procedures to reduce the risk)		**NEGATIVE IMPACTS ON ORGANISATION** • Risk of compromising peoples safety & welfare • Potential for non compliance with legal and regulatory obligations. • Penalties for non compliance could have a significant impact of long term financial performance. • Seen as a failure to meet customer & ratepayer commitments	**TREATMENT** The risk is being modified to reduce the likelihood of it occurring by ensuring that the Chief Executive Officer has appropriate processes and procedures in place to reduce and this is managed with specific KPIs in their individual employment agreement. .	**TREATMENT/RISK STATUS** Delegated authority to the Chief Executive Officer and specific KPIs are in their individual employment agreement. Act comes into effect on 4 April 2016. Health and Safety reviews of departments to commence to ensure that the Council is meeting its obligations under the Act. Council has no appetite for anything that compromises safety, welfare and legal non compliance. No non compliances recorded but 36 minor injuries recorded and 3 moderate injuries that required medical attention. No serious harm incidents.
UNTREATED LIKELIHOOD	Possible			
UNTREATED SEVERITY	Major			
TREATED LIKELIHOOD	Unlikely			
TREATED SEVERITY	Moderate			

8.0 LIFECYCLE MANAGEMENT PLAN

8.1.1 OUR DISTRICT

9.0 Overarching Issues/Strategies for Solid Waste

The five overarching issues regarding solid waste service delivery for council over the next few years are.

1. Kerbside Refuse and Recycling collection contract renewal, and what a new service might look like
2. A new operating consent for Broadlands Road Landfill
3. ETS costs and ability to reduce them going forward (Gas Flare)
4. Food rescue
5. Reduction of singe use items
6. Reuse and repair

KERBSIDE REFUSE AND RECYCLING COLLECTION CONTRACT AND SERVICE OPTIONS

Council has recently confirmed a contract extension to the kerbside collection contract through to July 2025. This will enable Council to await government policy announcements regarding container product stewardship as well as give Council time to look at and confirm the desired kerbside service going forward.

All service delivery options will be considered going forward, but Council will wait out the current market uncertainties, and in the meantime prepare for the roll out of any new contract in 2025.

Please see

Kerbside collections options document (objective Link number)

Council's ongoing presence in the refuse collection market allows Council to firstly control the price of the service, and thus have an impact on the ability of the commercial operators to transport out of the district, and secondly provides Council with the ability to incentivise waste minimisation practises and provide alternative services at a competitive price.

The two options being considered through consultation is a wheelie bin service or a bag service both options would include the collection of food waste.

FOOD WASTE

Makes up a high proportion of waste stream but is expensive to collect and process and markets are not always available. The cost of diversion from the waste stream for food waste compared to landfilling is expensive, but central government is looking to try and support food waste diversion.

Auckland Council are about to roll out a food waste collection from households and this material is going to be transported to Reporoa, where it will be treated (Biogas). This provides a local market for collected food waste in the Taupo district. The viability of collecting and treating food waste will depend on the gate price at Reporoa, the transport cost to get there and the collection cost.

There are three other possible markets for food waste, one being Verma composting, so add food in with the Bio solids and worms, the biogas plant in Reporoa and the other option is to windrow compost the food waste on site at the landfill.

Ways to reduce operational collection costs is to trade off other service levels, and by removing the odour of food from the refuse bag, refuse can then be collected fortnightly as opposed to weekly. A common practise is to collect food waste weekly and refuse and recycling biweekly thus reducing overall transport costs. Thought must also be given as to how to contain the refuse and recycling (bags or bins).

Any reduction of the current service to bi-weekly does give the commercial market a opportunity to compete.

Markets are now wanting uncontaminated materials, and one of the major problems with comingled recycling collection is that glass has to date been included, which has resulted in glass shards in the product, resulting in this material being landfilled. Recent service contracts have provided both wheelie bins and separate crates for glass to avoid this issue.

BROADLANDS RD LANDFILL CONSENT RENEWAL

The Broadlands Rd landfill operating consent expires in 2027, but there is additional space for landfilling for another 20years so it would be prudent to look at the cost associated with gas infrastructure and the term of the consent and the possibility that Council could obtain a new consent to cover the additional 20years of filling operations.

Opus consultants have been working on a fill profile and have determined that a considerable amount of fill will need to be removed from the site over the extended renewal period. Council has been to date allowing contractors to remove pumice from the site at no cost to expediate this fill removal.

Firstly, council needed to determine if the site was viable from a cost perspective going forward as apposed to closing the site and trucking waste to an alternative site, such as Hampton Downs Landfill north of Hamilton. The addition of a gas flare was added to the cost model as the NES will require gas destruction if the site takes more than 1 million tonnes over its life which Broadlands will if the consent is renewed.

Council determined that operating the site is viable over a new consent period, if the same amount of waste was being disposed to the site.

Another issue could impact the site viability and that is if the commercial sector starts diverting waste to an alternative site and undermines the revenue stream. It will be important that council is aware of this financial tipping point and adjusts gate prices to being under this point. The current mix of rate and gate charges can be utilised to achieve this outcome.

Obtaining a new consent could also be difficult, due to the location of the landfill next to Mount Tauhara, which is significant to the local Iwi. The existing consent was appealed by the Trust responsible for the mountain and council has promised the land that encompassed stage 1, unfortunately for a number of reasons this land is not currently in the hands of the Trust but it is being currently been worked on as a

priority. If council is unable to gain a new consent, then an upgraded transfer station at the site has been costed to enable bulk loading of waste to alterative site.

(See Objective file) for the operational model.

ETS REGULATIONS
The Emissions Trading scheme impacts the cost of refuse disposal at the Broadlands Rd landfill, as Council must purchase emission credits for every tonne emitted. Currently emission credit values are trading at around $75 (Council exposure $2+ million) and all indications are that the price will gradually increase as more demand comes online from other emitters in the market.

ETS Exposure Reduction
The ETS legislation is designed to reduce emissions through penalising emitters financially. Council does have the ability reduce this exposure by reducing the amount of emissions from the site, by way of flaring the gas.
When considering the provision of gas flaring at the site, Council must also consider the term of the current operating consent.

The ETS payments relate to every tonne disposed, so if Council was unable to renew the consent then any gas infrastructure on site after closure would not provide any financial benefit but would destroy any methane generated.

Methane generation dramatically drops off once filling operations cease. So, we do run the risk of over capitalisation of the site if no new consent is granted.
If Council was granted a new consent, the total tonnage of waste being disposed to the site will be over the 1 million tonne mark and so NES (National Environmental standards) require that the site operates gas destruction infrastructure.

If Council can obtain a new consent earlier than 2027 Council will have certainty regarding depreciating the infrastructure over a longer period and could install the infrastructure sooner to enable the cost of the ETS to be reduced.
(see Financial data in appendix).

Well performing gas destruction networks can destroy between 60-80% and possibly higher of the methane produced. (Broadlands 50%)

Opus consultants are currently analysing the performance of a pumice cap compared to an alternative plastic liner which would come at a higher capital cost. The current pumice cap allows gas to vent, unlike Clay caps used in other parts of the country, so additional depth of material in the cap may be required.

It is uncertain as to where the costs of emission credits will go in the future, as the currently the USA is not participating. Council has had to increase the cost of waste disposal (gate fee) to fund any increase.

WASTE LEVY
Government has recently undertaken a review of the waste levy, with the review covering cost of the levy and which landfills are included.

The levy has been extended to cover a range of different landfills meaning the revenue from the levy will increase significantly.

The waste levy is set to rise to $60 per tonne (currently $50 per tonne) from 1 July 2024.

RECOVERED MATERIALS MARKETS

Government standardisation regulation identify what is required to be collected from the Kerbside, and by default transfer stations, with a full list of the MfE website.

Government is looking to invest in onshore recycling of collected materials by using the WMF (Waste Minimisation Fund) to develop local infrastructure. This infrastructure will know doubt be located close to the larger urban areas / product volumes. Government are going to have to try and work out a way the Local government can support any national investments.

Taupo District Council have picked off all the "low hanging fruit" regarding easy to divert from landfill material, due to markets and cost. The next level of waste reduction becomes more expensive and requires more financial commitment from across government. Making sure that the investment continues to obtain enough product locally will be the challenge.

CONSTRUCTION & DEMOLITION WASTE

The increase in west levy funding, results in govt having a large fund to support the diversion od waste. C&D waste is a large proportion of the waste to landfill, so govt are looking to fucus funds to support diversion of this material. This fund will support councils intended upgrade of the Broadlands Rd transfer station to divert more C&D waste and council will be looking to achieve 50% waste levy funding to support this initiative.

RURAL WASTE

Govt are looking to support rural communities by implementing product stewardship programs for different types of farm waste. Farm waste has always been about the transport logistics about getting trucks on site when they are needed to collect material. A product stewardship program will mean that trucks will be going to rural sites as part of the programs so there will be an opportunity in the future to get other materials on to the trucks.

Currently farmers are faced with a decision to pay for some one to collect material or burn and or bury on site, which in most cases is the least cost option. The government program if implemented will eliminate that decision as the collection of end of use materials will have already been paid for through the purchase price.

COUNCILS MAIN CONTRACTS

Councils facility and kerbside waste contracts are set to expire at 30 June 2024, and council has gone to the market with a waste services contract that covers all of these services. This was done to reduce overheads but also to have a contract that would gain interest from the commercial market as for the kerbside contract the market dominance from one contractor meant that only one tenderer for the last kerbside collection contract.

A successful waste services contractor may want to negotiate disposal rates into the landfill, which Council has previously had in place to avoid waste leaving the district and undermining the cost effectiveness of the landfill operation. Any negotiated rate would be based around the disposal costs at an alternative disposal site (or any site

that they have negotiated a gate rate at) and the transport cost to get it there and an allowance for handling.

The Broadlands Rd landfill consent expires in 2027, and Council will need to consider the implications of losing parts of the waste stream to commercial operators. Council should look to renew the landfill consent as there is potentially an additionally 20yrs of void space available for filling operations.

Envirowaste Services currently provide a commercial kerbside refuse collection as well as skip bins and Waste Management provide a skip bin service. Both businesses could potentially look to divert waste to a cheaper disposal site if our gate rate is set too high.

Rotorua Council, who run their own landfill has recently had Waste Management open a transfer station in Rotorua and they have undercut the gate rate by a few dollars, any waste they collect is taken to Tirohia landfill as they have negotiated a lower gate rate there.

There is a saying in the waste industry "he who controls the waste stream wins", as the waste stream also has the revenue stream for the collection handling and disposal of the waste.

The Waste Minimisation Act, Section 42, requires Territorial Authorities to promote effective and efficient waste management and minimisation within its district, to achieve this Councils need to have some control of the service provision otherwise commercial service providers will not price incentivise minimisation initiatives.

The disposal rate at the gate is the governing factor influencing the ongoing viability of the landfill after the current service contracts expire. Council currently funds the cost centre 51% through rates and 49% through gate fees, but this policy is set to change to reduce the rate burden on district rate payers.

Council's mix of rate funds and user charges allows council to alter prices to incentivise diversion. Council can also use this funding mix to avoid competition by keeping the price structure low enough that it is uneconomical for competitors to compete, and or truck material to an alternative site due to the transport costs.

Council always has the full rates funding service model to fall back on if revenue streams were undermined. But the full rates model eliminates the ability to reward those that divert waste from landfill. At the kerbside this can only be done by the size of the receptacle, where Council has already eliminated the 240L wheelie bin for domestic use.

Council must continue to negotiate commercial disposal rate agreements for large customers and potential competitors so that waste flight is negated.

Loss of waste volume / revenue from Broadlands Rd landfill would mean that the current service funding mix would have to be altered and more of the cost of waste services would have to be rate funded, with the resulting rate impact.

Competitors are unlikely to compete with district transfer stations due to their location and the small size of the waste market in the areas.

As Council has negotiated long term commercial disposal rates it is considered that undermining of Councils waste volume and revenue stream is unlikely in the short and medium term.

Technology may also play a part in changing the playing field going forward, there has been a significant amount of discussion recently around waste to energy plants, and as both the major waste companies operating in New Zealand are now Chinese owned there is now the capital available to pursue this option. With any new technology, the governing factor will again come back to the gate rate being competitive plus the transport cost to get it there.

PRODUCT STEWARDSHIP

Local Government has lobbied Central Government on numerous products local government considers that need to be declared mandatory products (for product stewardship schemes) under the Waste Minimisation Act 2008 and have identified,

- Electrical and electronic equipment
- Tyres
- Agricultural chemicals and farm plastics
- Refrigerants and other synthetic greenhouse gases
- Plastic and glass containers

The mandatory process will take at least two years to be enacted and won't result in a large diversion of tonnes to landfill in the short term but will remove Councils from being the ambulance at the bottom of the cliff in trying to dispose of these materials.

The main product stewardship declaration that all councils across NZ are awaiting is the announcement regarding drink containers as this will dramatically alter what is to be collected at kerbside. With value being added to drink containers, less of them will appear in the crates at kerbside due to their value and any residual material left will assist to fund the service delivery.

The announcement regarding containers, and glass being included or not will greatly influence the roll out of any kerbside service delivery New Zealand wide.

STREET LITTER & RECYCLING BINS

The emptying of bins is contracted out, with Total Industrial Solutions currently contracted. The provision of Big Belly Solar Compacting Bins has seen a reduction in litter, a reduction in the number of litter bins but disposal capacity has remained the same, if not slightly increased.

Big Belly bins, due to their compacting ability provide the capacity of ten 60L bins. The Solar panel powers the compactor and powers the telemetry which notifies the contractor when the bins are full. This has seen a reduction in truck movements as well as a reduction in service requests for overflowing bins.

Council will continue to increase the number of recycling bins in the high use areas, with the end service level having a recycling bin and refuse bin placed together.

Contract performance is set so that no bins are allowed to overflow, and this allows flexibility for the contractor to focus on high use areas. Previously the contract was structured around scheduled runs.

FACILITY OPERATIONS
Council upgraded the Broadlands Rd and Kinloch RTS to remove Manual handling of recycling materials and give the community a better facility to assist recycling. The Kinloch upgrade mirrored the Broadlands Rd landfill facility which has a wall with holes that the community can place mainly glass through (but can take other materials). The bottles then slide down chutes into skip bins.

The provision of skips for recyclable materials then removes the need to manual handle the drums, (44 gallon) which are heavy and are a risk to the site operators.

These site upgrades are also planned for the Mangakino and Whakamaru sites. (business cases provided)

10.0 Service Delivery and Rationale

The Solid Waste service is carried out by a number of providers as shown in Table 8.1.

Service	Provider	Rationale
Asset Management	Council	To maintain the knowledge of the asset in house
Management of Maintenance Contracts	Council	To maintain control of the costs of the services.
Minor Design	Council	In house knowledge and resource available
Major Design such as Landfill development and Gas technology	Tendered	To capitalise on external expertise resource/ experience and take advantage of competitive pricing/competition.
Bylaw development	Council	To capitalise on internal expertise resource/ experience.
Strategy Development	Council	To capitalise on internal expertise resource/ experience

Table 8.1: TDC Service and Providers

The following table shows a summary of all TDC maintenance and renewals contracts

Council currently carries out the following operations by way of contracts and or service agreements to approved service providers as specified in their respective agreements.

Name of Contract	Contract Number	Contractor	Duration	First Expiry Date	Comments
Broadlands Rd	TDC1213/088	Envirowaste	2+1	Jul-27	Mostly maintenance but some renewal works

Name of Contract	Contract Number	Contractor	Duration	First Expiry Date	Comments
Landfill Operations					
Greenwaste Composting & District Shredding	TDC1213/088	Envirowaste	ongoing	Jul-225	maintenance
Concrete crushing		Materials Processing Ltd	ongoing		maintenance Service Agreement
Southern transfer station Operation	TDC/1718/208	Metallic Sweepings Contractors	3+1+1	July-25	Mostly maintenance but some renewal works
Refuse Haulage Transfer stations	TDC/1819/208	Envirowaste	3+1+1	July-215	maintenance
District Refuse/Recycling Collection	TDC/1314/105	Envirowaste	7+2+1	July -25	maintenance
Litter Enforcement Litter & Recycling Bin Collection CBD street sweeping	 TDC/1819/255 TDC/1920?295	Infrastructure Services Total Industrial Solutions Intergroup	 3+1+1 3+1+1	 March -27 2024	Internal Staff Mostly maintenance but some renewal works maintenance

Table 8-2: TDC Maintenance and Renewal Contracts

8.2.1 Contract types

Lump sum contract and measure and value contracts are the two types of contract procurement Taupō District Council utilise for project tendering. Where the estimated cost of the project is less than $50,000, a lump sum contract is generally used. If greater than $50,000, a schedule of quantities is provided to enable a measure and value contract to be tendered.

Lump sum contract: More than one contractor is asked to supply a fixed price quote for the project. The contractor is responsible for the measurement of quantities.

Measure and value contract: The quantities in the Schedule of Prices are measured by the Engineer, which is provided for the purpose of evaluating tenders. Each item of work is carried out at the fixed rate set out in the Schedule of Prices. The sum shall be adjusted by any additions or deductions under the contract.

Methods for tendering and evaluation

Tender Evaluation Method	Contract $ Value		
	$0-50,000	$50,001-$100,000	$100,000+
Expedited Procedures	√	×	×

(Negotiation)			
Expedited Procedures (Limited Invitation to Tender)	√	√	×
Lowest Price Confirming Tender	√	√	√
Quality-Price Trade Off Method	√	√	√
Weighted Attribute Method	√	√	√

Table 8-3: Physical Works - Method Selection Matrix

Key (×) = not permitted (√) = permitted

Note: For projects with a dollar value of less than $50,000 the expedited procedures are generally the most appropriate methods because administration costs will be less and hence a more reasonable proportion of total contact value.

8.2.1.1 ETS Legislation

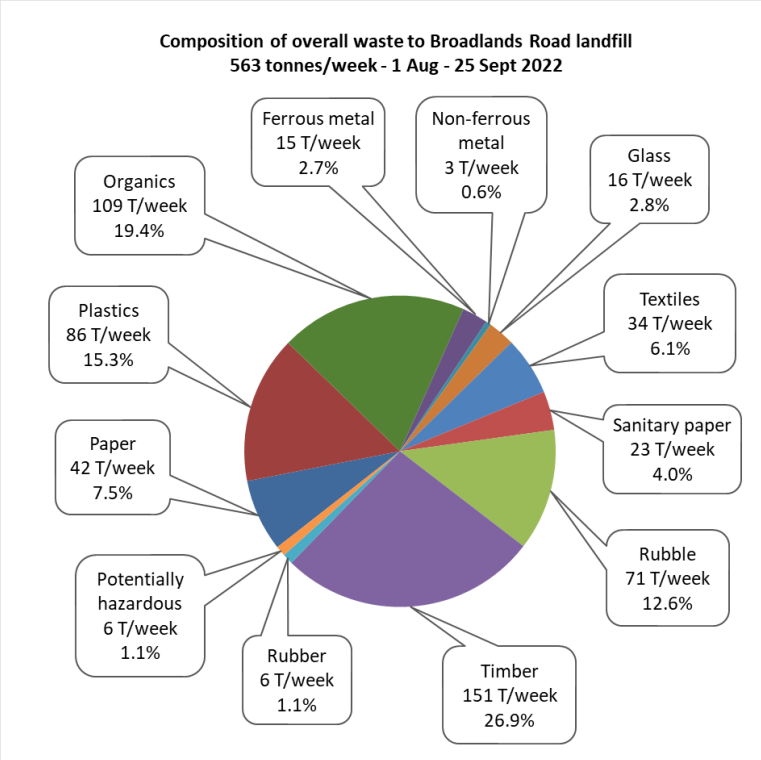
Central Government has passed ETS legislation which requires Councils to fund these ongoing costs, the costs relate to a levy on every tonne of waste disposed of to landfill.

Council will continue to review the need for Gas destruction and the related cost of ETS emissions to determine the most sustainable approach.

Emission credit requirements are determined by multiplying the tonnes in a calendar year disposed of to landfill by the default emission factor of 1.023, so for a waste tonnage of 30,000 tonnes the emissions would be 30,690 tonnes, emission credits would now have to be purchased and surrendered for that volume. (current value $2mil+) Council has forward purchased credits and will need to obtain financial advice on future purchases.

WASTE ANALYSIS

In March 2022 Council, contracted Waste Not Consulting, to provide a report on the composition of the Waste disposed of to the Broadlands Rd landfill. This report provides valuable baseline data for the review of Councils Waste Minimisation Plan as it enables Council to identify priority products to focus waste minimisation efforts. The report analysis both domestic and Commercial waste streams.



Timber was the largest primary category of waste disposed of at the transfer pit, comprising 26.9% of the total. Organics was the second largest category, comprising 19.4% of the total weight.

There are markets starting to evolve for a mix of treated and untreated wood, but Council will have to move quickly to secure access as the market is still very small.

Councils waste levy supported home composting subsidy program is aimed at reducing organic waste to landfill, to date it is estimated to divert over 200 tonnes per annum.

Food waste while not fully mandated is being implemented across NZ and has the capability to divert an estimated 1000 tonnes from landfill annually, saving on ETS costs. A food waste collection will also allow council to move to a fortnightly collection service, thus enabling council to reduce costs of service.

11.0 Asset Type

12.0 REFUSE DISPOSAL AND RECOVERY SITES

Overall Asset Objective:	To protect and safeguard the Taupō District environment by ensuring refuse is managed and disposed of in a safe, efficient and sustainable manner that maintains natural and aesthetic values.

Key facility issues are:

- Containment of leachate within the lined landfill cell
- Full compliance of WRC resource consents.
- Resource recovery and recycling options and operations
- Full compliance for Closed landfill WRC resource consents

13.0 Historical Expenditure

Historical expenditure for the Solid Waste assets is shown below.

	2014-2015	2015-2016	2016-2017	2017-2019	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
Operations and Maintenance	4,212	4,142	4,098	4,478	4,808	4,880	4,853	6,389	6,647
New Works	78	90	1,010	10	230	171	87	141	484
Renewal	75	114	87	60	136	138	134	136	272
Total	**4,365**	**4,346**	**5,195**	**4,548**	**5,174**	**5,189**	**5,074**	**6,666**	**7,403**

Table 8-1: Historical Solid Waste Expenditure ($,000)

14.0 Waste disposal and recovery facility Operations and Maintenance

Maintenance is carried out at district facilities to ensure that the levels of service outlined in the Level of Service section of this document are met. A summary of the future needs is included in Section 6, with a full financial summary in Section 9.

Performance standards for Contractors operating Councils facilities are included in the operational contract documents. In some cases, such as the Broadlands Rd landfill these performance standards are linked to the Resource Consents.

Resource consents can also require things such as site management plans as well as operational management plans i.e. green waste composting management plan. (Operational plans are kept in objective).

Closed landfills are also covered by resource consent, and the consents set conditions around the future maintenance requirements as well as contaminant level monitoring and site refreshment if necessary.

The provision of kerbside service delivery is managed through the operational contract for performance standards as well as the Solid Waste Bylaw that sets certain conditions around the provision of this type of service, the conditions in the Bylaw are there to protect the community and the environment.

The Bylaw provides conditions for operators such as

- Collection days and times
- Receptacle types and sizes
- Clean up after collections
- Ownership of materials placed at kerbside

If Central Govt initiate a product stewardship program for drink containers, we may well get people looking to remove material from recycling crates as these items will be worth money.

15.0 Waste Disposal & Recovery Facility Renewal

Renewal expenditure is major work that restores an existing asset to its original capacity or the required condition. By renewing plant equipment as required the quality level of service is met.

Undertaking renewals at the identified time will ultimately reduce the reactive maintenance and renewal spending enabling better budget planning with reduced unbudgeted spending.

The Solid Waste renewal program applies packaged renewal programs for each individual waste disposal / recovery facility around the district. Business cases for these works are included in the appendices. If an unexpected renewal is required, the lesser prioritised renewal (or renewals) is deferred till the next year. Some allowance has been provided for expenditure for between the packaged timeframes for unplanned works.

The renewal program has been formulated by ongoing condition assessment of site facilitates, where both the asset manager and the network engineer are assessing site facilities on at least a fortnightly basis.

As these sites are in continued use by the community, unplanned renewals is a constant issue, as sites tend to ware and tare more frequently with high public usage.

16.0 Future Renewals

$'000	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	Total
District facility renewals	88,000	89,760	91,731	111,334	113,665	122,045	124,366	126,731	142,054	144,607	**1,154,293**
Street litter / recycling bin renewals	138,600	141,372	144,477	147,664	150,755	153,777	156,701	159,681	162,716	165,641	**1,521,384**
	226,600	**231,132**	**236,208**	**258,999**	**264,420**	**275,822**	**281,067**	**286,412**	**304,770**	**310,248**	**2,675,678**

Table 8-2: Future Solid Waste Facility Renewal Expenditure

8.1.1.4 Waste Disposal & Recovery Facility Creation

The Capex program below maintains the ability of the Broadlands Rd landfill to continue to accept refuse from the district. It is considered that the outlying transfer Station sites have adequate capacity but the Whareroa, Omori and Mangakino sites need upgrading to eliminate as much as possible the manual handling of recovered materials.
Business cases for each of these projects detailing reason for the projects are included in the Appendices.

CAPITAL PROJECTS

Capital Expenditure											
$'000	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	Total
Gas Flare	-	51	52	2,664	-	-	-	-	-	-	**2,767**
Leachate Pipe upgrade if consent obtained	-	-	-	270	-	-	-	-	-	-	**270**
Mangakino transfer station Upgrade	-	90	-	-	-	-	-	-	-	-	**90**
New kerbside collection service includes LTP065 and LTP068	-	3,060	407	425	444	463	482	501	521	541	**6,844**
New lined cell	-	-	-	1,289	-	-	-	-	-	-	**1,289**
Power upgrade Broadlands transfer station	220	-	-	-	-	-	-	-	-	-	**220**
RTS Upgrade	-	-	120	4,778	-	-	-	-	-	-	**4,898**
Tūrangi Recyclables storage shed extension	77	-	-	-	-	-	-	-	-	-	**77**
Waste compactor bin	39	-	-	-	-	-	-	-	-	-	**39**
Whareroa transfer station upgrade	-	-	-	100	-	-	-	-	-	-	**100**
	336	**3,201**	**579**	**9,526**	**444**	**463**	**482**	**501**	**521**	**541**	**16,594**

Table 8-6: Future Solid Waste facility capex Expenditure

Capital Project validation

Landfill Cells

The creation and timing of the new landfill cells are based around the infill tonnage which has been predominantly stable over the last 10 years, and the cost of liner which is placed for Leachate collection. The aim is to not invest in liner that is not being used as this could be deferred until the next cell development. The other issue that has a bearing on the amount of liner being placed is the side slopes and finished slopes which affect the length of time the cell will take to fill.

The design philosophy for the landfill cell builds is to build to the optimum height, slightly less than consented so that there is enough space for another lift on top. This filling practise may have to change now due to optimising the cell filling for gas production. Some changes or movement of future cell developed can be expected as further optimisation analysis is undertaken.
Driver is service level.

Gas Flare

This will be required by the NES if a landfill takes more than 1 million tonnes of waste and will be required if council is successful in achieving a new operating consent for Broadlands Rd. Driver is Economic and consent condition

Site Capping Works

The resource consent requires that finished cells are capped with either temporary Capps or finished Capps to minimise the amount of infiltration into the landfill. Capping layers will be further optimised depending on consent renewal
Driver is Resource Consent

Site Upgrades

These transfer stations have not been altered in 20 years and there is a need to reduce the H&S impact of manual handling drums of recycling. Currently recycled materials are stored and drums which are then man handled onto trucks to be processed. Having to handle heavy drums of glass places risks on the site operators, which can be reduced by moving to bulk handling using skip bins and a different public interface which mirrors the Kinloch and Broadlands Rd facilities.

These projects will increase the recycling capacity and provide more room for vehicle accessing the sites. These upgrades will enable these sites to be included in an overall district operational contract. The Driver is service level

Broadlands Rd Sewer Pipe
This item would increase the size of the Broadlands Rd sewer pipe from the Landfill to Miro Street and would be the second stage of increasing the capacity of the current system. The pipe would be upgraded to a size that could provide for additional connections.
The reason to increase the pipe size is that the resource consent limits the amount of head over the landfill liner and by 23/24 Council will have constructed an additional two stages that will collect Leachate and thus the outlets pipe will need to be increased.
Driver is service level and resource consent

Bulk Haulage loadout
If Council is unable to renew the Landfill operational consent past the 2027 current expiry period, then council will need to undertake works to enable the site to undertake bulk loading of transport trucks on site. This upgrade will also incorporate additional waste sorting platform, which may need to be covered. It will be important for council to reduce the size of any waste stream prior to transporting.

Waste compactor bin
Both the Turangi and Mangakino transfer stations operate a compactor system which increases load weights so saves money in transport costs. These facilities have been run with one spare bin, but at times this has been found to be insufficient with waste building up in the pits, so an extra bin is being constructed so that two spares are available at any time.

Power Upgrade Broadlands RD
The Broadlands Rd transfer station is having problems with the power tripping out due to the transformer being to small. This upgrade will provide three phase power and will anticipate increases in power use through more diversion of C$D wastes.


Taupo District Council
Broadlands Road Landfill
BROADLANDS ROAD
0 75 150 225 300 375 450 525 Meters
Ortho - Photography flown 2007
Scale (A4) -1:6,000
NZTM 2000
N
Map Author: Jarrod Alty
Map Date: 29 July 2008
Map Location: V:\GIS_Maps\Staff_Maps\Broadlands_LandfillLmxd

BROADLANDS ROAD LANDFILL /RESOURCE RECOVERY CENTRE

Landfill Facility

The purpose of the landfill facilities is to provide controlled disposal of Solid waste (including disposal or collection and handling of specified hazardous waste and household waste) generated within the Taupō District and environs.

By accepting household waste, the Waste Minimisation Levy (Waste Minimisation Act 2008) will apply to the site. The Waste minimisation levy is currently $50 exclusive per tonne of waste disposed to landfill. The waste levy will increase to $60 per tonne from 1 July 2024.

The Key issues of Landfill Management (Broadlands Rd) are:

- Resource Consent renewal
- Achievement of Resource Consent standards
- On-going development of new cells
- Day to day landfill filling operations
- Capping of completed cells
- Resource Recovery and sale
- Recycling
- Collection of Fees and Charges
- Investigation of Gas Flare Infrastructure
- Leachate control

Documents that relate to this site include:

- Broadlands Rd Site Management Plan
- Current Waste Management and Minimisation Plan
- Technical Guidelines for the Disposal to Land
- Solid Waste Analysis protocol SWAP (Waste survey) completed March 2022
- Current Operational Contracts
- Green Waste Management plan
- Leachate contingency plan
- Resource Consents

The Broadlands Rd Landfill has resource consent (expires 31 December 2027) to place up to 50,000 tonnes of Municipal solid waste and 27,000 cubic meters of Leachate p.a. onto land in the vicinity of Broadlands Rd. The current annual tonnage is in the vicinity of 25,500 tonnes.

The site also undertakes green waste composting and clean fill is disposed as extra cover over part of the stage 1 site.

A lined pond located on top of the landfill footprint houses a number of Geo Bags that receive fats oils and greases from the district. The Geo bags allow water to evaporate through the pours in the bag while fat and grease is retained. A number of bags can be stacked in the pond, once these are filled the pond will be covered over, and a new pond and bags will be constructed. The life of the existing pond with bags is 15 years. A review of the bags efficiency is currently being undertaken as the bags are not holding the grease and fat as required and it is now fouling the leachate pond and pipe infrastructure.

While the site has consent to operate to 2027 it is important to use the available capacity in a sustainable way by diverting recyclables from the landfill through implementation of all available waste minimisation tools.

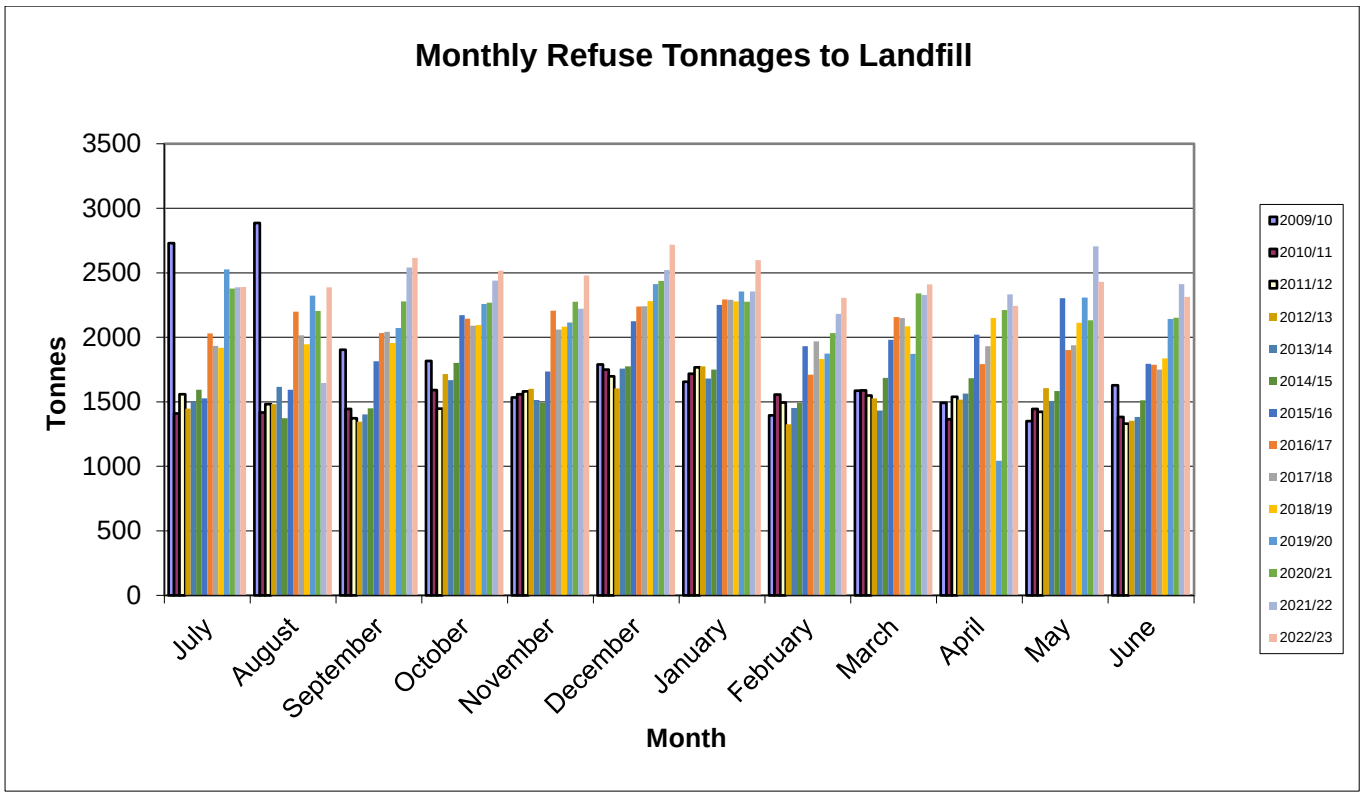
The site operational contact has been split in two, to allow for consent or consent outcome, with the transfer station contract looking to be for ten years and the landfill contract will expire in 2027 in line with the operating consent.

The current filling program looks to make use of the final contours as the consent is unknown it would be a waste of money to expand the footprint if we were not able to obtain a new consent.

The costs of new cells in predominantly influenced by liner costs with cell sizes around 1600 to 1800 square metres. Soil for the compacted base material has been to date sourced on site and re-compacted. Cell development has averaged around $1,000,000 funded by loan and is depreciated by the full life of the cell to finished level.

There is a further twenty years of filling after the consent expires if an area at the back of the Council owned land is progressively mined.

Landfill operations commenced on site in 1977 and a comparison of contour surveys in March 1993 and February 1993 suggested an annual filling rate of 11,400m3 p.a. Following the closure of the district smaller disposal sites, the fill rate increased to 30,000 m3 p.a. in 1997.



Fill tonnages over last 14 years average around 23,000 tonnes per annum

In 2000, land filling ceased on the stage 1 unlined cell and a new fully engineered 2 ha cell was commissioned. The new cell (and all subsequent cells) are fully lined and

incorporate Leachate and Stormwater control which enables the Broadlands Rd site to be classified as a Class 1 Landfill under the new Technical guidelines. At the same time as the new stage 2 was being developed, a new recycling area was constructed as well as a larger area for green waste composting; both of these operations are on the footprint of the stage 2 landfill development.

Council installed an additional weighbridge in 2008 to enable Council to more accurately measure weights of waste to Landfill. Council can now better analyse the waste stream and identify priority products that Council needs to focus on to achieve its waste minimisation goals and those set by central government. The second Weighbridge has also enabled Council to move to a "weigh all" methodology and weight-based charging for all vehicles.

The weighbridge uses a Weightrax data program and uses a camera system to record number plates and stores these in the system to be used when vehicles leave the site.

Landfill Fire
In January of 2020, there was a fire at Broadlands Rd, which took two days to extinguish and placed the operation of the site in jeopardy. It is surmised that the fire was started from Lithium-ion batteries that have caused fires at waste facilities right across the currently over the last couple of years with a water reservoir and an infrared camera now in operation to reduce this risk.

Flare and Cover Requirements
A new operating consent would require the operational contract to be amended to allow for, the operation of gas flare, the installation of gas wells, to maximise gas capture. The current operational contract has three years to run, and so any new operational requirements can be included in this document, and new operational contract.

Use of Waste Minimisation Levy Funds
Council has, through development of its Waste Minimisation plan identified a number of opportunities for use of the revenue coming from the Waste Minimisation Levy. The funds will equate to around 130k based on population but is finally determined by the total tonnage of waste disposed to landfill across the country that the levy applies too.

The levy is currently set at $50 per tonne, but this is set to increase next year to $60 to further incentivise diversion of waste and fund minimisation opportunities.

Endorsed options for expenditure of the Levy are:

- Funding of existing service delivery in the district
- Concrete waste diversion
- Waste education and diversion programs
- Street recycling bin purchases and operational costs
- Subsidisation of Compost bins to reduce organic waste volumes to landfill
- Cross boundary waste minimisation opportunities with other Councils.
- Investigate increasing the diversion food waste from going to landfill
- Provide a community grant program for Community waste minimisation initiatives
- Continue to extend the street recycling bin coverage
- Provide E-waste recycling at the Broadlands Rd Landfill

- Advocating for product stewardship / producer responsibility for the recovery and recycling of products
- Develop a community litter awareness program (care for a section of beach/road) and work in with National Litter programs
- Develop a best practise guide for waste handling for event managers
- Work with Industry to support the diversion of C & D Wastes
- Introduce education / awareness programs to support Council
- Diverting of tyres from Landfill
- Support the food waste collection program from Kerbside
- Support food rescue
- Support the reduction of single use items (coffee cups)
- Support reuse opportunities

(see WMMP 2024 for full list of levy funded actions)

RESOUCE RECOVERY CENTRE

Council has reconfigured the site since the installation of the second weighbridge so that free (rates funded) recycling opportunities are prior to the Weighbridge. This has also been coupled with the provision of a Reuse Shed and the naming of this area as the Broadlands Rd Resource Recovery Centre. Habitat for Humanity are currently running the reuse operation for Council under contract to Envirowaste.

Domestic customers no longer visit the tipface, which has reduced the health and safety risks on site as well as enabled the onsite contractor to better manage the tip head. Domestic customers now offload materials into the transfer pit where the contractor sorts and recovers recyclable and reusable items prior to final disposal. Commercial operators and commercial customers now also must wear the appropriate PPE gear when on the tip face which includes a hard hat.

Domestic green waste users also use a tipping location near the transfer pit so now no longer go to the tip head. Green waste stockpiled is then trucked to the shredding and windrowing operation. Again this has reduced the health and safety risk at the site.

TRANSFER PIT

The funding split for the Solid Waste cost centre is currently being decided through consultation with the community. A rating portion allows Council to gather funding from out of district rate payers that need to pay for the opportunity cost of having services, refuse collection is fully user charges.

Disposal Charges can be found as part of the LTP consultation doc.

Stage 2D Broadlands Rd Landfill

Landfill Capacity / Compliance

Landfill performance relates to available capacity and compliance with Resource consents.

Capacity.
The Broadlands Rd current design footprint has been designed into multiple cells to be developed over time while avoiding over capitalising cell development by having unused liner.

Compliance with Resource Consents
The resource consents currently held for the Broadlands Rd landfill are:

- 960384 to place 50,000 tonnes of waste per year
- 940583 to discharge up to 27,000 cubic metres of Leachate per year into or onto land
- 960386 to divert stormwater
- 960387 to discharge stormwater

Performance is measured by six monthly inspections of the landfill by a representative of Environment Waikato and a peer reviewer as required by the operating consent and quarterly bore sample analysis of water taken from the boreholes around the landfill.
The Landfill has not had any breach in operating consent for over 20 years of operation.

Operations Plan
Old waste disposal methods meant always tipping undesired refuse in some remote and easily accessible area. Health issues related with uncontrolled dumps and growth of environmental awareness make modern disposal options complex and costly.

Currently land filling is carried out at the lined area with Leachate collection and reticulation system. There are less 50 Class 1 landfills currently operating in New Zealand.

Landfill operation includes.

- Spreading of refuse into layers not exceeding 0.5m
- Compacting of refuse by 3 to 5 passes of the compactor
- Covering of refuse by cover material (150mm compacted depth)
- Tip face should not be steeper than 1 in 3
- Litter and vermin control bait stations and gull shooting)
- Lifts of compacted refuse are not more than 5m in vertical compacted depth.
- Green Waste composting of material no more than 150mm in diameter
- Concrete crushing of clean concrete into 40mm and below chip for resale
- Clean fill disposal over a portion of the stage 1 landfill site
- Leachate pond control and stormwater control
- On site recycling
- Operation of the Reuse shed
- Recovery of recyclables from the public drop off pit

CLOSED LANDFILLS

Closed landfills are still recorded as part of the Solid Waste network as they require regular monitoring, analysis and maintenance. The closed landfills at Mangakino, Turangi and Stage 1 of Broadlands Road are included in the assets covered by this AMP.

Broadlands Road – Stage 1
Stage 1 of the Broadlands Road landfill has been closed and capped and TDC is required to monitor this landfill and carry out remediation work where necessary.

The stage one area is an unlined landfill and received refuse from the mid seventies to the year 2000. The current footprint is also receiving extra cover from Council operating a Cleanfill on the site, but this is restricted to a small portion to the east of the overall foot print. There are a number of monitoring bores situated around the site that are used to analyse the condition of stage one and stage two sites.

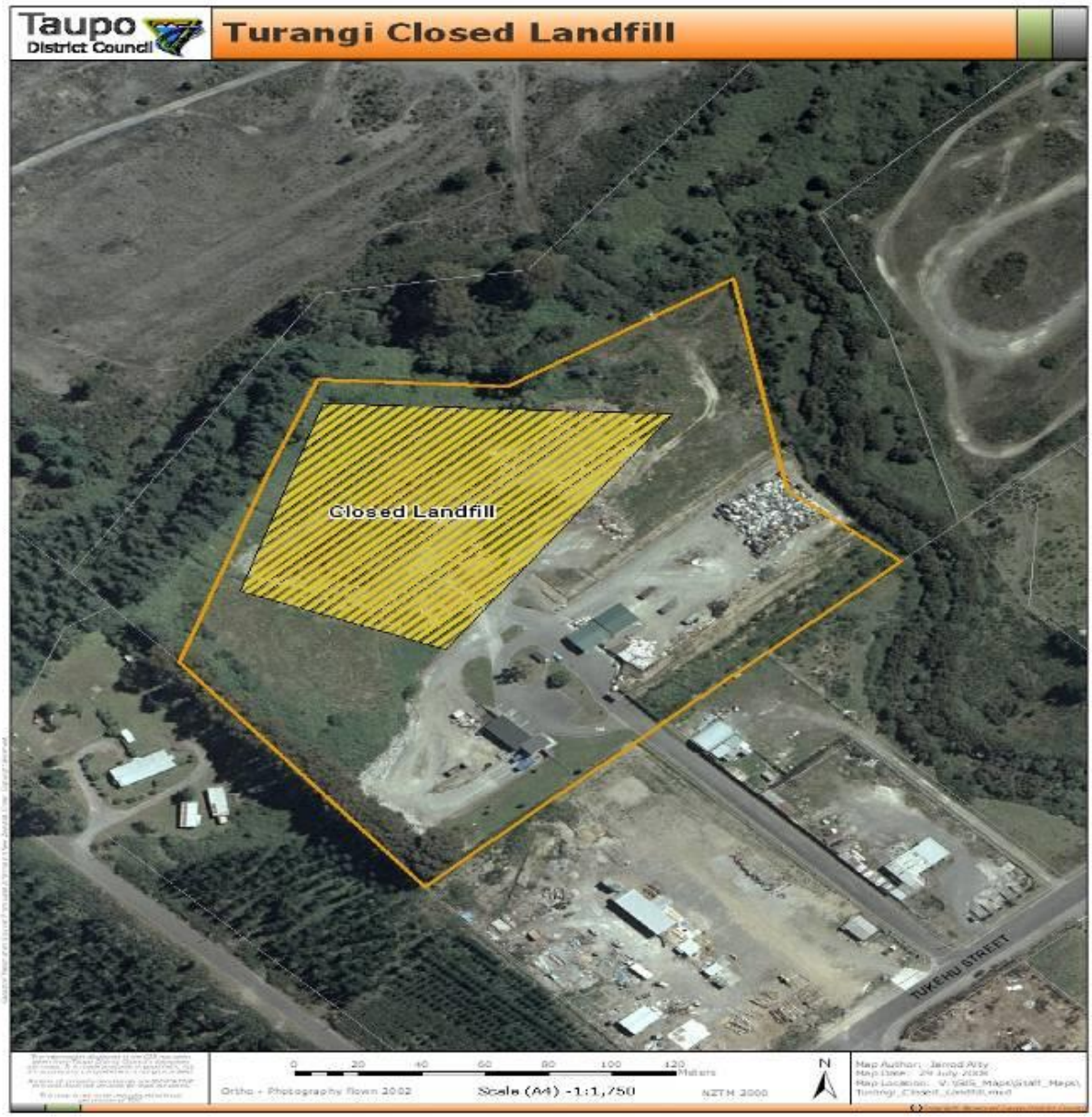
Council has negotiated with the Tauhara Mountain Trust as part of the stage two Resource Consent process for a portion of the stage one site to be handed over to the Trust. Council will retain its responsibilities under the resource consent for monitoring and remediation if needed.

The hand-over of this land has been delayed as council has been unable to complete the process due to uncertainties with the trust named to receive the land but negotiations are ongoing.

Results from the monitoring data are as expected from a closed and capped landfill and no change to the surface structure has been observed over the last 20 years.

Storm water from the site is captured in an on-site storm water pond and then piped to two detention ponds where water then finds its way under the Landfill access road and into the gully below the stage two landfill, where all onsite storm water from stage 2 also dissipates.

Council staff undertake regular walk over inspections to determine the quality of the grass cover and inspect for possible damage to the cap.



Turangi Closed Landfill

The Turangi Transfer Station footprint also incorporates the Closed Turangi Landfill under Resource Consent numbers 940721 for Leachate discharge and Consent number 940724 for discharge to air.

Adjoining land use is rough pasture / scrub to the south and industrial properties to the north and east. The site is bordered by the Kahurau Stream.

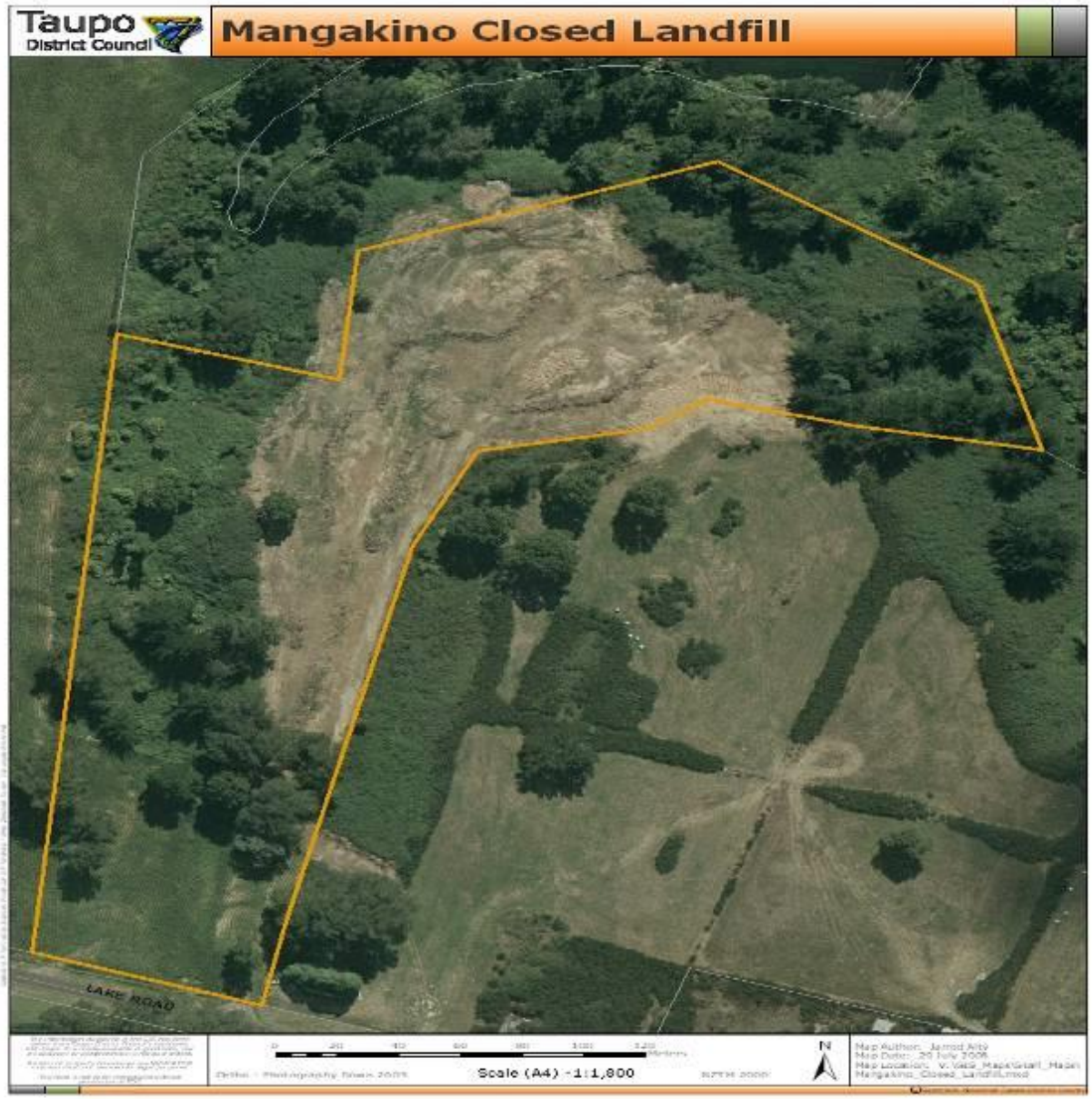
The closed landfill received mostly domestic type waste from the surrounding township and was operated with open trenches which were regularly fired to burn residual waste which was the accepted practice at the time.

A Resource Consent application was prepared and lodged for this site in September 2003 and consent was granted in August 2005. The application report concluded that capping and restoration of this landfill is the preferred course of action. A portion of the site has already been buried under approximately 2m of clean fill and it is proposed that continued deposition of clean fill over coming years will ensure a large capping depth across all areas of the site. The application proposed an on-going monitoring programme for the site, concentrating on the effects of leachate on water quality in the Kahurau Stream.

The consent can be reviewed by both parties (WRC & Council) with a three-yearly review, which would summarise the results of the water quality monitoring and would increase or decrease the amount of monitoring needed based on the data.

Regular monitoring of the adjacent Kahurau stream and the on site storm water drainage trenches has resulted in Council applying for a change to the consents to allow monitoring to be pushed out to three yearly (which has been approved by WRC), as results have shown that there are no adverse effects from the closed Landfill.

Green waste shredding operations are undertaken on top of this site and the cap and over time this has resulted in a build-up of topsoil which has created ponding leading to damage to the overall cap. Ponding on top of the old landfill leads to ingress of Stormwater and a subsequent increase in leachate production.



Mangakino Landfill

The Mangakino landfill is located off Lake Road on the northern outskirts of Mangakino. The 100 m x 170 m site is on a terrace some 24m above Lake Maraetai and is bounded to the north by a steep gully. Adjoining land use to the east and west is grazed pasture. The residential area of Mangakino is 450m to the east. The nearest residence is 100m west of the fill area.

A resource consent application was prepared and lodged in May 2003 for a 20-year discharge of leachate to groundwater and landfill gas to air from the closed site. The site has been capped, top soiled and grassed. The consent application notes that there is no need to excavate the landfill and remove it to a secure (properly designated) land or to install groundwater control. The application proposes that water quality bores be monitored and that the results are reported to the Regional Council.

Waikato regional Council issued Consent Number 940593 which is the closure consent for the site, the Closure consent allows for the discharge of Leachate to Ground and expires 1 June 2046.

Ongoing monitoring of the site shows a declining waste impact, and WRC have allowed the on-site monitoring to be extended to three yearly.

Monitoring and site inspections have now been moved to three yearly as the site has shown no changes since the site was capped. Regular inspections have shown that there has been a good vegetation cover over the site and stock numbers have been kept low.

This site is not Council owned but is under Lease from the Iwi owners for the term of the Closure Consent.

If there were to be any adverse environmental impacts from the site, it is Councils view that Central Government should share a portion of the risk of negative effects from the site as this Landfill was originally used by Government when building the local dam infrastructure.

Central Government's response was that Council would be able to apply to their remediation fund if works were identified.

The Landowners of the site have requested that Council provides legal indemnity to them for anything that may need remedying on the site such as subsidence, leachate leak; fire Etc. (Council declined). Council and the landowner have now negotiated a lease term.

Transfer Stations

The purpose of a Transfer Station is to provide controlled and conveniently located refuse disposal facilities for the public and cater for the rural sector.

A refuse transfer station is a receiving facility for collecting waste before it is transported to a disposal site and is a non-offensive easy to use amenity for handling household waste materials

Assets at these stations consist of various site improvements including recycling bins, signage, canopies, fencing, Kiosks, reuse sheds, haulage bins. All sites are fenced and manned (not Whareroa) and charge for the disposal of refuse, recycling being free to drop off (rate funded).

The Re-use sheds at all of the district transfer stations provide local communities the opportunity to reuse material that would have otherwise gone to landfill, these facilities have received considerable support from the community and are well utilised.

The Reuse sheds negate the need for an inorganic collection seen in some other districts as the community has the ability to either pass on or purchase preloved goods at all of Councils waste facilities.

The current operational contracts are split between the south and north of the district and the Mangakino site is currently being run in house by Council.

Operational efficiencies can be gained by combining the operation of the landfill with all the district transfer stations, with the bulk haulage contract also included. This will allow the operational contractor more flexibility regarding operation of the district waste facilities and it is hoped will result in operational savings for council.

Site improvements at the district facilities are aimed at reducing health and safety risks in regard to handling recovered materials as well as enabling bulk handling of materials to be loaded out to a district or out of district sorting facility prior to going to the market.

Kinloch Transfer Station

The Transfer Station established at Kinloch includes recycling areas for green waste, cans, bottles, plastics and paper. Refuse is transported in a loose bin to Broadlands Road. There is room on the site to expand the bin disposal area to hold another bin thus allows for growth in the area and summer peaks in the future.

The Kinloch Transfer Station services the Kinloch Township as well as the surrounding farming community, which has a high percentage of lifestyle blocks. There is no commercial type waste received at the site.

The operation of the site is under two distinct contracts, with Envirowaste responsible for the day to day running of the site which includes green waste shredding and the operation of the Kiosk for the handling of fees and charges, and Envirowaste operate the District Waste Haulage Contract.

Growth of the surrounding area can be catered for by increasing the service levels from the refuse haulage contract that services the district facilities and by the addition of another haulage bay for an additional bin to the site. It is not envisaged that the extra bay for the holding of an additional bin will be needed during the next ten years as the increase in service level can be provided by way of the operational contracts.

In 2010 Council provided covered containment at all of the district waste facilities to enable the recovery and reuse of preloved goods, in Kinloch this has seen a vast amount of material recovered which would have previously gone into the waste skip.

Green waste at the site is mulched to make sure the material is a good quality and this material is provided to the community at no cost. Council then does not have the job of finding a disposal site for the material and it provides good will in the community.

Recently the site has been upgraded, with additional seal for vehicle movements, we have moved to bulk storage of recyclables in skips and we have extended the site footprint to allow for growth in the area. The extension of the site footprint has allowed for additional storage of green waste which in turn has reduced the amount of times the pile needs to be pushed up. The moving to bulk storage has reduced the health and safety risk of handling full containers and reduced the truck movements needed to empty full containers to Taupo.

Turangi Transfer Station

Turangi Transfer station serves a population of approximately 5,000 residents. This modern facility is managed and operated under contract and has full recycling facilities. The station handles refuse from Turangi as well as from bin loads from Omori and Whareroa Transfer Stations. On average 10 x 28m^3 containers per week (approximately 40 tonnes) of refuse is transported to the Broadlands Road landfill.

Metallic Sweepings Ltd operate all three transfer stations located at the Southern end of Lake Taupō and are responsible for waste reception and handling as well as on site recycling and sale and transport to market. They have also recently taken on gate keeping and fee handling responsibilities at all three Southern transfer Stations.

Council has in 2010 provided covered containment for preloved goods at the site and this site has a regular clientele.

Green waste is currently shredded on site (on top of the Closed Landfill) and left to break down, members of the community can access the shredded material free of charge, with any residual build up of shredded material trucked off site when site constraints require. There has been an ongoing demand for the good quality material.

The site needs upgrading, and this has been funded in the annual plan, with the development of further bulk storage of materials and the removal of manual handling of recovered materials.

Council has also recently increased the size of the glass storage bays, as the size of the bays were not sufficient to store the amount of glass recycled over the peak summer months.

The Turangi transfer station is one of two sites in the district that have refuse compaction plant, in this instance it is a Carepak 314 stationary Compactor. The compaction plant was installed to allow for compacted loads to be transport to the Taupō landfill, and thus minimise transport costs.

Waste composition is mainly domestic in nature as large commercial waste is directed straight to the Broadlands Rd landfill.

Waste Not consulting, surveyed the waste composition in March 2017.

Council has allowed Councils kerbside refuse and recycling contractor the ability to temporarily store recyclable material at the Turangi RTS in peak times such as over the Xmas holidays.

Turangi Waste Composition
During the survey period at Turangi RTS, data were gathered on a total of 190 vehicles. The activity source and the estimated total weight for each activity source are shown in Table 5.1.

Types of waste at Turangi transfer station - 19 February-18 March 2017

Turangi transfer station waste - Types of waste - 19 February-18 March 2017	# of vehicles in survey	% of vehicles in survey	% of weight	Tonnes/week
Construction and demolition	0	0%	0%	0.0 T/week
Domestic bags only	168	77%	36%	6.5 T/week
Industrial/commercial/institutional	14	6%	21%	3.7 T/week
Litter	4	2%	11%	1.9 T/week

Residential	33	15%	33%	6.0 T/week
TOTAL	**219**	**100%**	**100%**	**18.1 T/week**

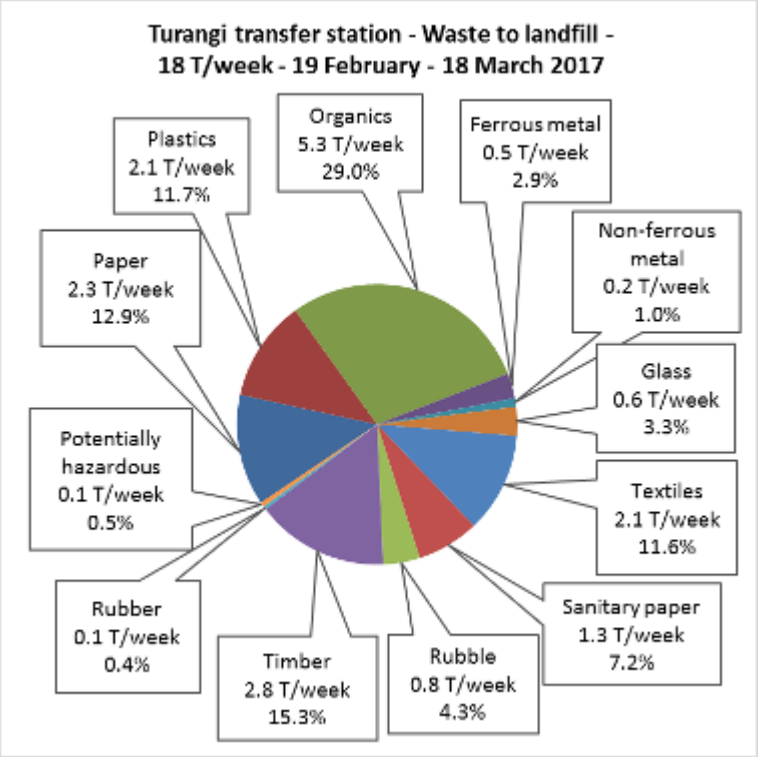
There were no loads of construction and demolition waste disposed of during the survey. A majority (77%) of the vehicles disposing of residual waste at the facility disposed of domestic bags only. ICI waste was disposed of by 6% of vehicles and these loads comprised 21% of the total weight. Residential waste accounted for 15% of vehicle loads and these loads comprised 33% of the total weight.

To estimate the composition of residual waste at Turangi RTS, it has been assumed that the composition of domestic waste was the same as calculated for the 2013 audit.

Primary composition of Turangi RTS waste - 19 February-18 March 2017

Turangi transfer station waste - Composition of waste - 19 February-18 March 2017	% of weight	Tonnes/week
Paper	12.9%	2.3 T/week
Plastics	11.7%	2.1 T/week
Organics	29.0%	5.3 T/week
Ferrous metals	2.9%	0.5 T/week
Non-ferrous metals	1.0%	0.2 T/week
Glass	3.3%	0.6 T/week
Textiles	11.6%	2.1 T/week
Sanitary paper	7.2%	1.3 T/week
Rubble	4.3%	0.8 T/week
Timber	15.3%	2.8 T/week
Rubber	0.4%	0.1 T/week
Potentially hazardous	0.5%	0.1 T/week
TOTAL	100.0%	18.1 T/week

Organics was the largest component of waste disposed of at Turangi transfer station, comprising 29% of the total waste stream. Timber was the second largest component, comprising 15%.



Turangi transfer station waste to landfill - 19 February-18 March 2017

The Turangi Transfer station currently handles around $160K of revenue annually which is all charged by load based estimation.

The provision of weigh Bridge has eliminated the need for load assessment and will provide for automated transaction based on the weight of loads. The Taupō Weighbridge program has been extended to include the Turangi site and commercial operators currently using the site receive monthly bills based on the current tonne rate.

There are 3 compactor bins, 7 full size open top bins and 2 half sized open top bins that service the district transfer stations. All these bins require ongoing maintenance and renewal. It is not envisaged in the short term that additional bins will be required.

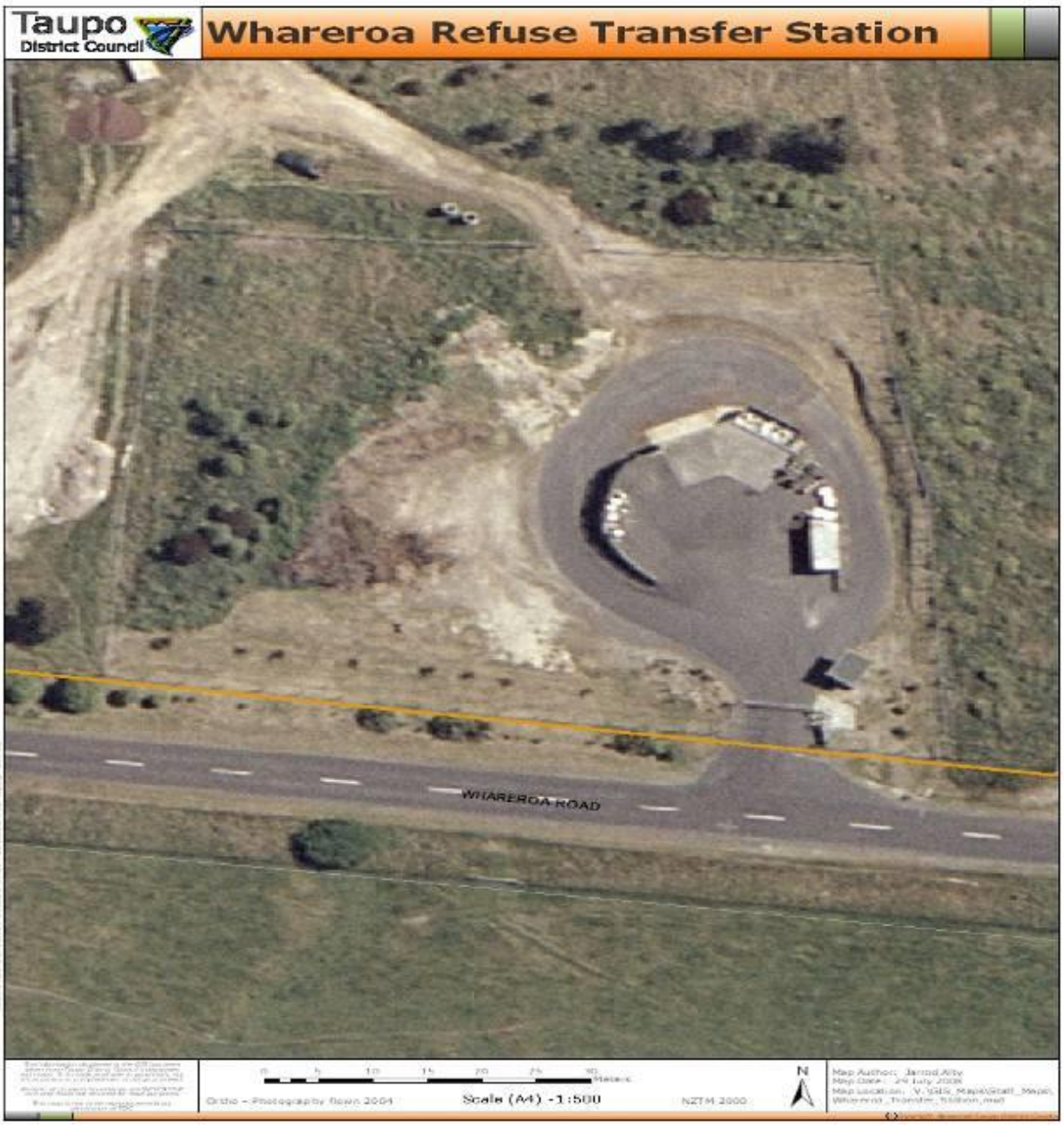
Omori Transfer Station

Commissioned in 1995, Omori Transfer Station serves the settlements of Omori, Pukawa and Kuratau, and is located 15-19 kilometres from Turangi. This area has a small resident population that peaks to approximately 4,000 over the summer period. The facility caters for a recycling and a green vegetation shredding area. All refuse is transported to Turangi, processed through the transfer station compactor and relocated to Broadlands Road. This site had a reuse shed (covered containment) built in 2009 and see's good volumes of material being recovered.

Green waste can also be double mulched to make sure of good product quality and thus demand from locals, this enables Council to avoid the need to truck material off site.

The Omori site has opening hours that allow the local community to drop of refuse bags and other waste prior to leaving the district, as a large proportion of the local houses are not occupied during the winter months.
The site does not have any power which means that all financial transactions have to be cash, which is a constraint when dealing with the public. The provision of power which would be brought up the road by way of overhead lines would allow the site to have a water tank and pump to provide pressurised water and lighting.

The road around the green waste drop off area also needs to be sealed as the green waste shredding vehicle as well as the community vehicles have difficulty using the current road due to it being unsealed.



Whareroa Transfer Station

The residents of Whareroa are currently serviced by a bulk refuse bin cleared on an as needed basis that is emptied at the Turangi transfer station. There is also an area for vegetation shredding.

Growth will be addressed by increasing the service level through the operational contracts, the site was provided with covered containment for the storage of reusable goods in 2010 which was largely built by the local community.

The Whareroa Transfer Station is the only site that does not strictly adhere to the district user charges policy in that the site is not manned and a turnstile has been installed that gives community member's 24/hr access for bagged refuse.

Due to its isolation and the small number of full-time residents, Council in conjunction with the local community has decided to rate users of the site so that Council can minimise the on going manning costs and provide a facility that is in tune with the community's needs.

This arrangement has seen vary little abuse regarding out of community dumping as the site is fare distance from the highway. It has also meant that the local community have taken ownership of the day to day operation of the site in a caretaker role.

The reuse shed on site is run by the community and serves as a focal point where people from the area assist in the operations and get compost etc.

Green waste is double mulched for the community and the community looks after site accessibility by opening the large swing gates in the weekends.

There is no onsite Kiosk as the local community is rated for access to the site based on estimated usage.

This site also manual handles recovered materials and needs to be upgraded to a bulk handling facility. A business case has been provided to mirror the recycling interface at both Broadlands and Kinloch.

The site is set to be upgraded with funds allocated in the 27/28 year.

Mangakino Transfer Station

A manned transfer station operates at the Mangakino Service Centre Depot site off Lake Road and has been in operation since May 1998. The station is paved, and signage directs users to the various areas, e.g. general recycling, green waste, car bodies, white-ware recyclables or the household refuse bay. Refuse is compacted and transported to Broadlands Road landfill.

The transfer station services the Mangakino, Whakamaru and Atiamuri communities as well as the surrounding farming community. The site does not accept any

commercial waste, and large commercial loads are directed straight to the Broadlands Rd Landfill.
Green waste stockpiled on the site is offered to the local community free of charge, and for a small charge Council will provide a truck for transport.

Growth in the area is limited, but growth can easily be handled within the existing operational contracts.

Covered storage for reusable goods was provided in 2010 and material collected in the shed is taken to a second hand operation that works out of the town centre.

The site is operated by Envirowaste currently, with recyclables transported back to Taupo before bulk loading to the end processing and market.

The current concrete pad that is used for the storage and load out of recovered material needs enlarging as the tractor must load out from uneven ground when stacking recycling bins onto the truck which has been identified as a health and safety issue by staff.

This site also manual handles recovered materials and needs to be upgraded to a bulk handling facility. A business case has been provided to mirror the recycling interface at both Broadlands and Kinloch. The project to upgrade the site is in the 25/26 year.

The Managkino site will be included in the overall contract the operates all of the district waste facilities.

Cleanest District in New Zealand

Council staff haves set a vision of "the Cleanest District in NZ"

The litter and recycling bin service delivery is only one of the services that will under pin this vision statement.

Council also utilises "in house" tidy trucks to deal with the litter hot spots mainly within or close to the urban settlements. For the roading network, Council Contracts this service within the roading maintenance contract.

Council also has radio and educational material relating litter and employs staff to walk the streets with a vacuum machine to collect waste in the Taupo CBD.

Council's service delivery for bin provision varies throughout the urban settlements. Whareroa, Omori, Kuratau and Pukawa do not have any refuse bins, but do not suffer from litter as the community is proactive in picking up any material and take material home. These communities also do not have any fast food outlets and thus litter that we see from these establishments in other areas is not present. The geographical isolation of these towns also means that most food is brought from supermarkets and consumed at home.

Other urban centres, Taupo and Turangi do have fast food outlets and are connected to the state highway, so see vast numbers of people passing through the district purchasing material and unfortunately discarding this material on occasion.

There is a high demand for Refuse and Recycling Bins in these two main urban centres and Councils current service delivery covers CBDs and some parks and reserves and high use areas such as the super Loo and Taupo Lakefront.

Litter is discarded in a number of ways; Council does have a problem with fast food containers thrown from vehicle windows after consumption, and this mainly impacts the rural roads and state highways around the district with eating distance of the purchase. Litter is also discarded after items have been unwrapped and the wrapping is discarded, and some litter is generated from windblown kerbside collection material.

To achieve Councils vision, there needs to be a cross organisational effort placed into, collecting discarded material, educating people around why not to litter and achieving some community ownership of the issue as well as some form of penalty if caught discarding material.

Possible solutions:

- Councils security firm to enforce litter outside normal hours for hot spots
- Own a beach / street etc program
- Approach people who do the right thing with a prize, a rubbish sticker possibly (open to other options could be a voucher from retail outlets)
- Collect the litter collected over a week and make public, we need to make the community aware of the issue plus our vision (cleanest district)
- Find out from roading contractor where most waste is discarded and increase the service level in these areas.
- Link in with local litter face book page / build relationship
- Target specific groups, back packer's / campervan folk/ locals

- Signage into town / litter free district
- Enforce $400 fines

The above solutions will be included into the Waste Management and Minimisation Plan as well as developed further with the relevant divisions of Council.

Street Litter & Recycling Bins

Currently there are currently 4 different type of street litter bin and 1 Love NZ recycling bin provided in the central CBDs in some parks and outside satellite shops.

The green steel 60L refuse bins are passed their use by date and are being phased out as they reach the end of their useful lives. Most are in a poor to average condition with signs of rust and paint deterioration. As they are steel they can be recycled once removed.

The bin stock has been condition assessed with help from the collection contractor and all the bins apart from the old steel bins are in excellent to good condition. The condition assessment also provided GPS locations and photos of all bins.

CBD stainless bin

The stainless round bin with the district motif is the main CBD bin being used and the condition of these bins is generally good. We have found that they do have a fault where the lids can twist which makes it difficult for them to close and lock. This issue is being worked on be the manufacturer.

The wood slat bins are being used to replace the steel 60L bins throughout the district. Their appearance is much better than the steel variety and the price for replacement is similar. To date there has been no problem with the functioning of these bins.

The Big Belly solar compacting bins use power from the solar unit to power the compaction plant as well as send messages to the contractor to advise them that the bin is full. Council and the current contractor have installed a total of 51 compactors in high use areas.
Big Belly bins have allowed council to reduce the overall bin numbers and bin clutter but retain the all-important bin capacity due to the compaction function. The bins have enabled the contractor to achieve the service level of no overflowing bins due to their ability to send messages.

Due to their size Big Belly bins are not suited to the CBD street but are suited to areas of high pedestrian numbers such as the Taupo Lake front and parks such as the Super Loo area and the South Domain in Taupo. The Bins are also useful when sited in remote locations that require the contractor to drive long distances to inspect as the telemetry allows the contractor to collect when full.

Funding has also been provided for increasing the stock of recycling bins with the final service level goal being a recycling bin next to each refuse bin.


Wood Slat bin

Love NZ recycling bin and Big belly solar compactor

To achieve the best results in waste diversion for street litter and recycling bins, the bins must be located next to each other as people are reluctant to walk a distance to recycle but will participate if the option is easy to use.

Contamination with items such as coffee cups is still an ongoing issue and Council will need to dovetail its litter education program with the national litter program being run by the packaging council in conjunction with government funding

Bin combinations

Old style 60L steel bin

Love NZ Recycling bin

A large percentage of the Love NZ bins have been supplied to Council through grants from central government as well as the packaging Council. By spreading the Love NZ bins around the country government are trying to provide a consistent level of service to our tourist industry.

Council will need to continue to educate the community and visitors to the district on what is and is not recyclable as contamination rates in street recycling bins is reasonably high as items such as coffee cups universally thought of as recyclable and sometime promoted as such currently are not.

Performance Contract

It is considered that the current contract service performance is appropriate and provides flexibility for the contractor to achieve the desired outcome of no overflowing bins.

Past contracts had the contractor undertaking set runs at set times which meant that bins full between collection runs were left to overflow.

The current contract has incorporated the Big Belly Bins in the remote locations and high use areas, which cuts down on unnecessary vehicle movements. These bins along with extra recycling bins have provided additional capacity.

The outcome of this is that the contactor has been able to learn where the high impact areas are depending on what type of day it is and focus on these without having to travel to areas where bins are not being used. There are a number of different conditions that impact on bins use, these being weather conditions, events, long weekends and the main holiday period.
Maintenance of the bin stock is currently undertaken in house and emptying and refuse, bag provision along with recyclable sorting and processing to market is undertaken under contract.

9.0 FINANCIAL SUMMARY

10.0 Process of Determining Financial Forecast

The provisional financial forecast for Solid Waste was determined by identifying new works, and the continuation/evaluation of current maintenance and renewal strategies within each of the components, i.e. service delivery and waste facilities. Changes to the operations (OPEX) and capital projects (CAPEX) expenditure for items within each of the asset types were generally due to maintaining current level of services and changes to contract rates.

Level of service consultation carried out in the previous LTP indicated that the community were generally satisfied with Councils current spending within the various asset groups. This feedback was also used when determining provisional budgets. A Council wide 10yr expenditure review is carried out. The strategy for this review is to:

- Assign realistic timing to projects given the resources available under Councils current funding sources and in relation to impacts in other Asset Management Plans.
- Optimise timing of projects.
- Generate consistent budgeting philosophies across all Council divisions.
- Align expenditure with growth predictions.

Consultation on the final 10yr financial forecast will be carried out via the 2024-2034 TYP process.

11.0 Funding of Expenditure

12.0 FUNDING STRATEGY

The focus of this AMP is to identify the optimum (lowest lifecycle) cost for Solid Waste and to identify the cost for each asset group necessary to produce the desired level of service. How this cash flow will be funded is outlined in Council's long term financial strategy.

Current funding sources available for Solid Waste include:

- Rates – income generated by the collection of general, separate and differential rates.
- Fees and charges (ref Web site for current Fees & Charges).
- Govt allocated funds under the Waste levy

Funding the Cost Centre

In order to provide for on-going operation of the Solid waste facilities and services Council will need to continue to invest Capital expenditure within the District.

Currently the existing services are funded through a split between user charges at facilities and a rating portion, the funding split being 51% to 49%. This funding split is to be reviewed to enable gate fees to be raised, with any changes reflected in this document once the review has been completed.

The Kerbside service delivery service is looking to be rated funded under the new proposed kerbside service delivery contract. Recycling service is incorporated in the rating portion with the reason being that a user pay and rating split for facility operations is to enable a significant cost differential between refuse disposal and recycling services which are perceived as being free (rates funded) by the community.

Councils current funding split is a reflection of the public good involved in keeping the price of Solid Waste services affordable to reduce the amount of illegal dumping experienced throughout the district and also in recognition of the amount of out of district home ownership and the responsibility of this set of rate payers to help fund the solid waste infrastructure and services.

The funding split also enables Council to set fees and charges at a level that avoids competition and waste flight away from the Broadlands Rd Landfill.

Costs for Solid Waste assets and services are forecast to increase due to the kerbside contract and facilities being included in a combined services contract.

Emissions trading costs have increased to $75 per emission credit, which has meant an increase in operational cost to around $2+ million per year. This cost has been funded by a mix of gate and rates. There is uncertainty as to the value of emission credits in the short and medium term.

Council is not considering the use of development contributions on new subdivisions as a funding option for solid waste assets as the cost is already partly recovered by fees and charges and the revenue recovered from development contributions would be minimal.

13.0 ALLOCATION OF FUNDS

The process of allocating funds is generally based on:

- Maintenance and operations are funded from General Rates and fees and charges.
- Renewal works are funded by Depreciation.
- New Works are funded by Loans.

The funding strategy can be found within the Long-Term Plan.

HISTORICAL EXPENDITURE

	2014-2015	2015-2016	2016-2017	2017-2019	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
Operations and Maintenance	4,212	4,142	4,098	4,478	4,808	4,880	4,853	6,389	6,647
New Works	78	90	1,010	10	230	171	87	141	484
Renewal	75	114	87	60	136	138	134	136	272
Total	**4,365**	**4,346**	**5,195**	**4,548**	**5,174**	**5,189**	**5,074**	**6,666**	**7,403**

14.0 OPEX: OPERATING AND MAINTENANCE EXPENDITURE

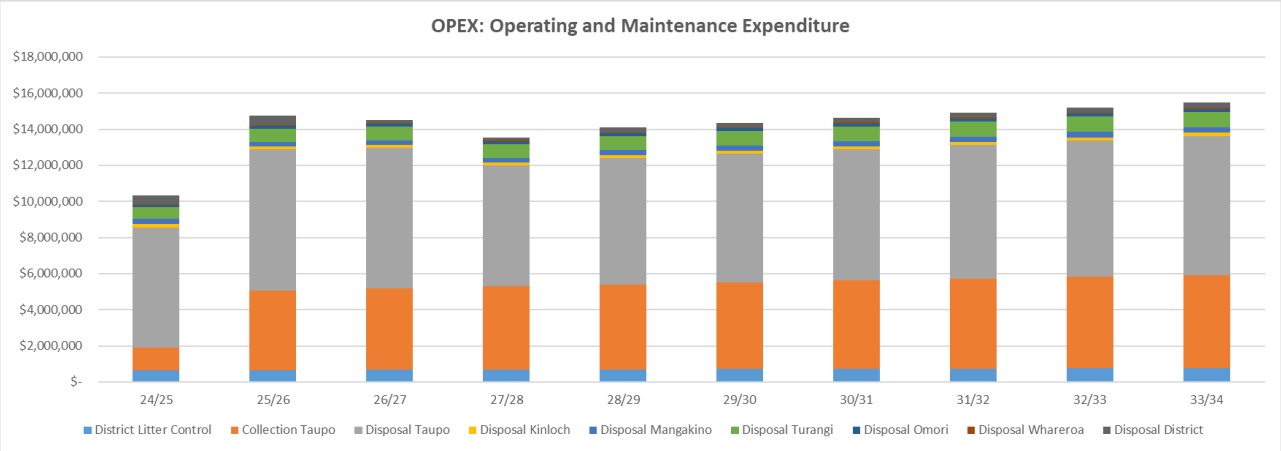


Figure 9-1: Operating and Maintenance Expenditure ($,000)

Operation and maintenance costs average approximately $14M/year for the next 10 years. Operational costs are set to increase due to the cost of the ETS, waste levy, wheelie bin program and new waste services contract.

Operational costs shown in the above graph do not include TDC administration and allocation of internal costs or Interest and depreciation.
The total cost breakdown is included in the Total Expenditure and funding section (see appendix for work papers showing how the Opex and maintenance costs have been determined).

15.0 OPEX: INCOME

Operational income is generated from the gate fees at district facilities and sticker and coupon sales for refuse collection.

Opex income will be adjusted to reflect the current funding policy for solid waste which has rates at 51% and gate revenue at 49%. This funding policy is likely to change as part of the LTP debate around revenue from fees and charges.

10yr Operating Revenue

		2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34
	Revenue										
1	General Rates	(850)	(863)	(880)	(893)	(911)	(929)	(939)	(960)	(977)	(991)
1	Targeted Rates	(3,003)	(8,046)	(8,708)	(7,781)	(8,708)	(8,843)	(8,917)	(9,060)	(9,181)	(9,389)
2	Operating subsidies	(640)	(653)	(667)	(682)	(696)	(710)	(724)	(737)	(751)	(765)
1	Fees and charges	(6,914)	(6,384)	(6,524)	(6,668)	(6,808)	(6,944)	(7,076)	(7,211)	(7,348)	(7,480)
	Total Revenue	**(11,406)**	**(15,946)**	**(16,779)**	**(16,024)**	**(17,123)**	**(17,426)**	**(17,656)**	**(17,968)**	**(18,257)**	**(18,625)**

RENEWAL EXPENDITURE

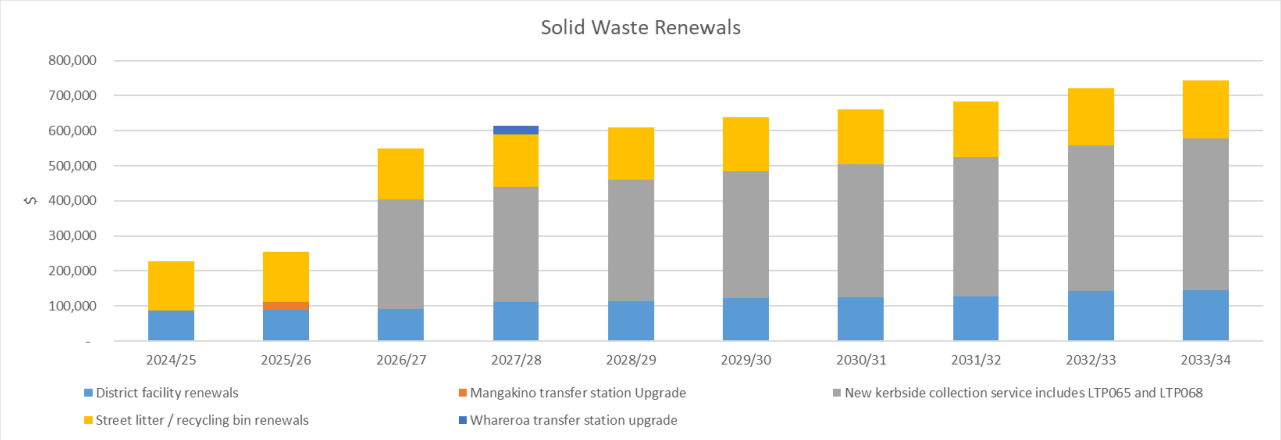


Figure 9-2: Renewals Expenditure ($,000)

Renewals include any items where an existing asset is replaced for example pumps or compactor motors etc. Renewal costs are based on packaged renewal program for each district facility. Renewal expenditure increases from 2026 due to the cost of Kerbside bin renewals.

Generally, the timing of renewal for an asset is based on assessment as the asset is nearing the end of its useful life. Loss in service potential is calculated by straight-line depreciation with the exception of land which is not depreciated. The depreciation rates are applied at a component level and are dependent on the remaining useful life of each component.

Component	Useful Life (years)
Compactors	25
Barrier arms	7
pavement	10
Pumps	8
Buildings	50
Signage	4
Fencing	12
Kiosk Furnishings	4
Recycling containers	4
Cash registers	4

Table 9-1: Solid Waste Asset Useful Lives

A summary of the depreciation of Solid Waste assets is presented in the Taupō District Council Annual Report.

Project sheets for renewals are included in the appendix and table 8.5 in section 8 itemises the renewal projects.

16.0 CAPEX: NEW WORKS EXPENDITURE

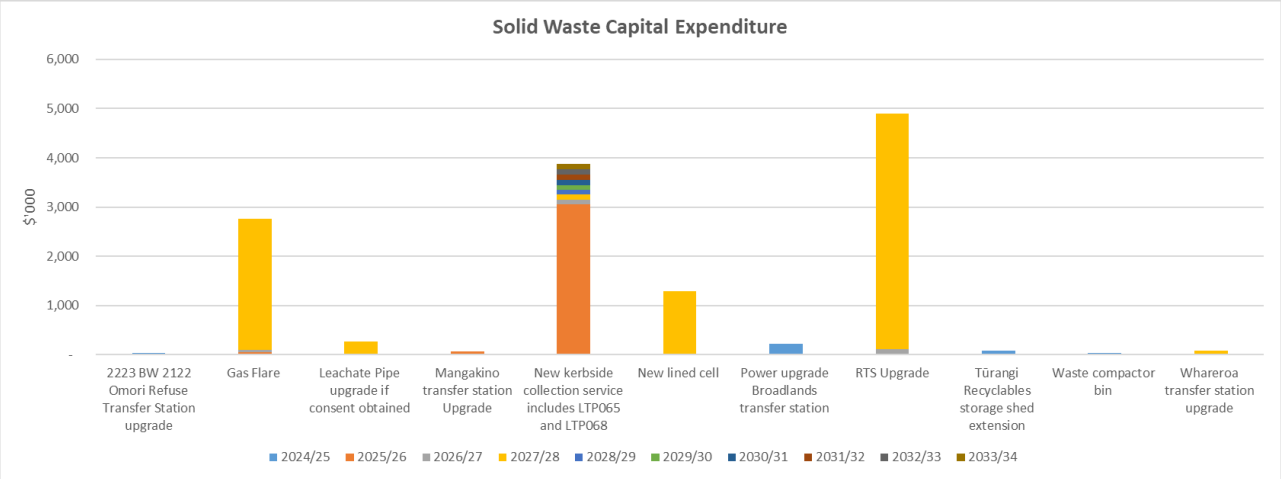
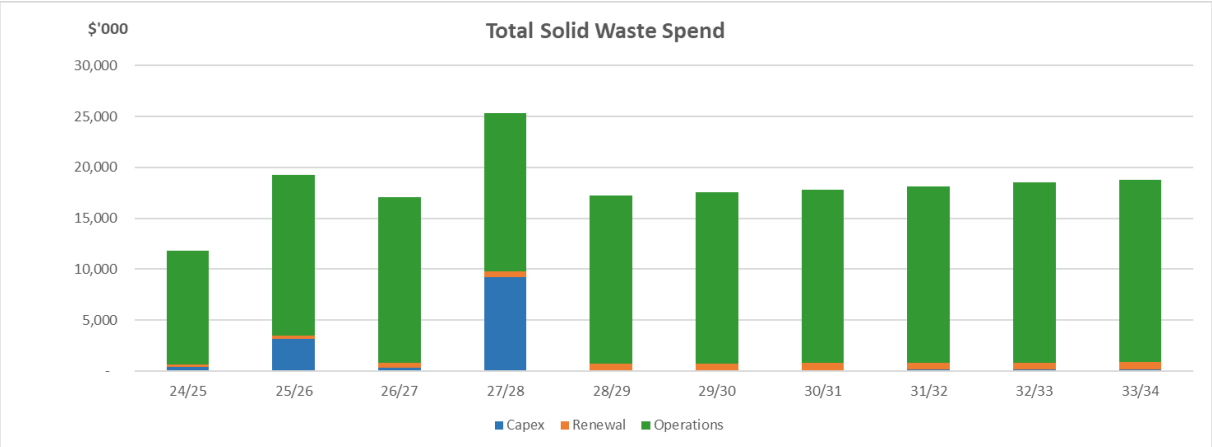


Figure 9-3: New Works Expenditure ($,000)

New works expenditure is governed by works required to meet resource consent requirements and on-going cell development at the Broadlands Rd landfill.

Peaks in spending are due to the new cells being provided at the Broadlands Rd Landfill, a gas flare and the upgrade of the Broadlands Road transfer station to enable further reduction of C&D waste as well as enabling the site to bulk load materials to transport out of the district, with the material being loaded being diverted materials and possible waste to an alternative disposal site if a new consent is obtained for operating the site post 2027.

Project sheets for each project are included in the appendix and table 8.6 and section 8 has the new works projects.



Total solid waste cost centre spend, asset controlled expenses only average just over 18 million with peak showing for the installation of gas destruction infrastructure and RTS upgrade.

17.0 EXPENDITURE LINKAGES TO LEVEL OF SERVICE

Section 5 (LOS) outlines how each of the budgeted items relates back to the level of service being provided.

18.0 Total Expenditure and Funding

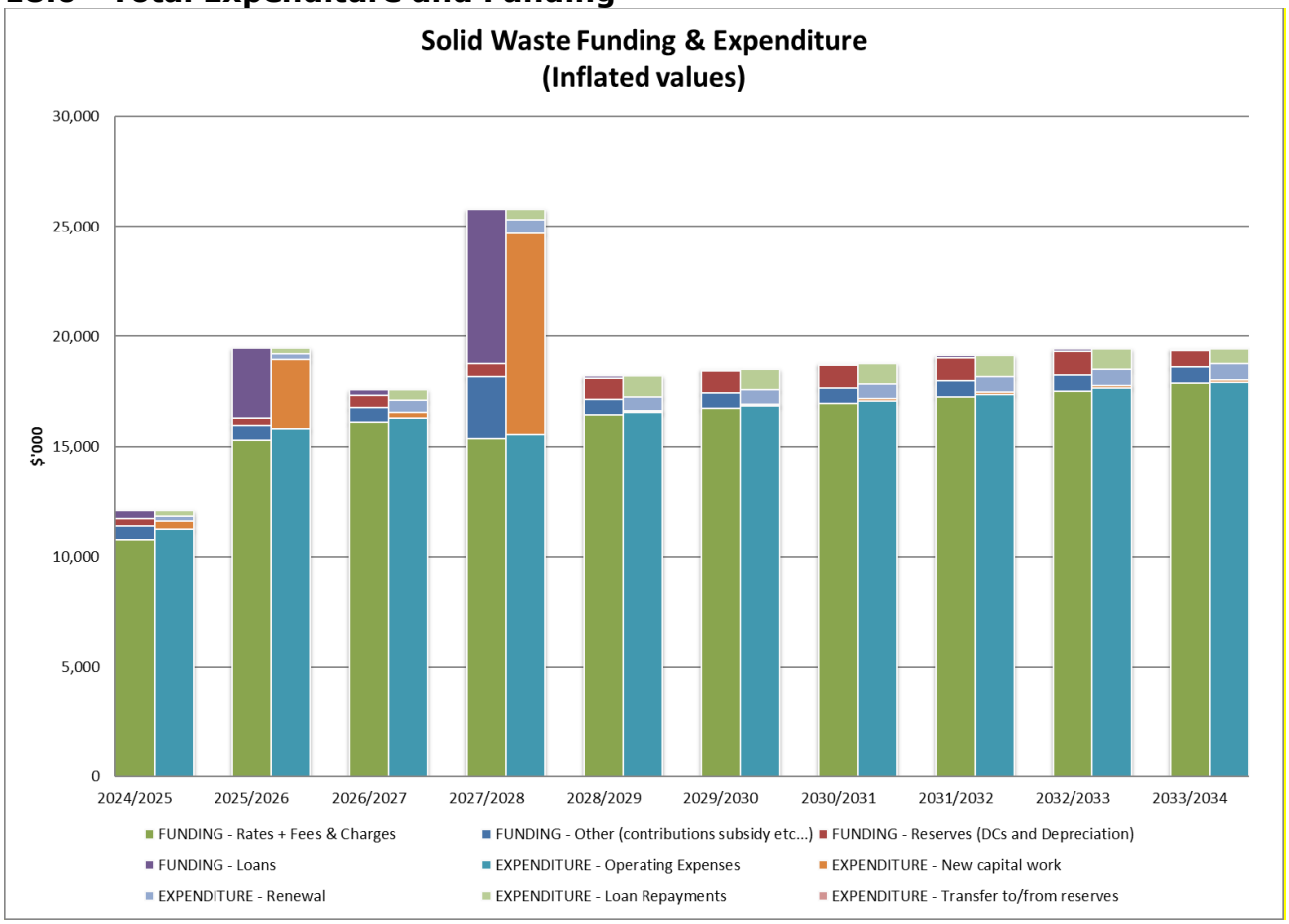


Figure 9-4: Total Funding & Expenditure ($,000)

Overall, the total budget fluctuates depending on the capital projects, however the average spend over the 30 year LTP period is approximately $8M per annum.

19.0 Valuation of Solid Waste Assets

Solid Waste assets provide a continuing service to the community and are not generally regarded as tradable. The cost to replace an asset with the Modern Equivalent Asset (MEA) is used as a basis to determine replacement value.

Refer to Section 4 (Asset Data), for a summary of the valuation of Solid Waste assets. A full valuation report is available on request.

Rates for renewal costs are taken from current operational contract rates. These rates are compared to like contracts in NZ. Rates for specific items are identified and compared from various suppliers

20.0 Financial Assumptions

The financial assumptions are included in the Introduction Section (section 1).

21.0 Financial Confidence Levels

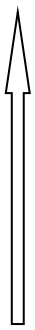
The confidence in the asset data used as a basis for the financial forecasts has been assessed using the following grading system from the International Infrastructure Management Manual – Australia/New Zealand Edition, April 2000.

Confidence Grade	General Meaning
A	Highly reliable. Data based on sound records, procedure, investigation and analysis, documented properly and recognised as the best method of assessment
B	Reliable. Data based on sound records, procedures, investigation and analysis, documented properly but has minor shortcomings, for example the data are old, some documentation is missing, and reliance is placed on unconfirmed reports or some extrapolation.
C	Uncertain Data based on sound records, procedure, investigation and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade A or B data are available
D	Very Uncertain. Data based on unconfirmed verbal reports and/or cursory inspection and analysis.

Table 9-2: Confidence Grading Table

The confidence level is B+ overall.

Financial forecasts within the first three years are seen as reliable with the reliability decreasing with time. Also the reliability depends on the phase of the project, with reliability increasing as the project moves from scoping to construction.

Construction Design Investigation Scoping	Increasing reliability 

	Solid Waste	AP 23/24	Year 00	Year 01	Variance Year 01-AP23/24	Year 02	Year 03	Year 04	Year 05	Year 06	Year 07	Year 08	Year 09	Year 10
	Revenue													
	Rates revenue	**-**	**(3,504,338)**	**(3,852,374)**	**(3,852,374)**	**(8,909,165)**	**(9,588,172)**	**(8,674,053)**	**(9,618,421)**	**(9,771,555)**	**(9,855,306)**	**(10,019,576)**	**(10,158,453)**	**(10,380,802)**
1	General rates – 10001	-	(473,421)	(849,687)	(849,687)	(862,761)	(880,107)	(893,488)	(910,902)	(928,946)	(938,530)	(959,580)	(977,445)	(991,311)
2	Targeted rates - solid waste - 11004	-	(3,030,917)	(3,002,687)	(3,002,687)	(8,046,404)	(8,708,065)	(7,780,564)	(8,707,519)	(8,842,609)	(8,916,776)	(9,059,996)	(9,181,008)	(9,389,491)
2	Targeted Rates - Whareroa Collection – 11008	-	-	-	-	-	-	-	-	-	-	-	-	-
4	**Revenue from operating activities**	**-**	**(5,275,000)**	**(6,913,800)**	**(6,913,800)**	**(6,384,078)**	**(6,524,277)**	**(6,668,232)**	**(6,807,806)**	**(6,944,250)**	**(7,076,312)**	**(7,210,879)**	**(7,347,949)**	**(7,480,011)**
	Airport Carparking Revenue - 16000.261	-	-	-	-	-	-	-	-	-	-	-	-	-
	Refuse disposal charges - Cleanfill fees - 16020.274	-	(20,000)	(23,800)	(23,800)	(6,426)	(6,567)	(6,712)	(6,853)	(6,990)	(7,123)	(7,258)	(7,396)	(7,529)
	Refuse disposal charges - Concrete sales - 16020.275	-	(75,000)	(118,800)	(118,800)	(127,500)	(130,300)	(133,175)	(135,963)	(138,688)	(141,325)	(144,013)	(146,750)	(149,388)
	Refuse disposal charges - Green waste fees - 16020.273	-	(258,000)	(296,900)	(296,900)	(318,750)	(325,750)	(332,938)	(339,906)	(346,719)	(353,313)	(360,031)	(366,875)	(373,469)
	Refuse disposal charges - Refuse Cash Sales - 16020.270	-	(1,206,000)	(1,626,900)	(1,626,900)	(1,746,852)	(1,785,214)	(1,824,604)	(1,862,795)	(1,900,130)	(1,936,266)	(1,973,086)	(2,010,592)	(2,046,728)
	Refuse disposal charges - Refuse Commercial Sales - 16020.271	-	(3,295,000)	(3,897,400)	(3,897,400)	(4,184,550)	(4,276,446)	(4,370,804)	(4,462,289)	(4,551,724)	(4,638,287)	(4,726,490)	(4,816,335)	(4,902,898)
	Refuse disposal charges - Reuse Centre - 16020.276	-	-	-	-	-	-	-	-	-	-	-	-	-
	Refuse disposal charges - Stickers - 16020.272	-	(421,000)	(950,000)	(950,000)	-	-	-	-	-	-	-	-	-
	Refuse disposal charges - Recycling - 16020.277	-	-	-	-	-	-	-	-	-	-	-	-	-
	Refuse Disposal Charges Sundry Revenue - 16020.278	-	-	-	-	-	-	-	-	-	-	-	-	-
	Developer Recoveries - 16070.122	-	-	-	-	-	-	-	-	-	-	-	-	-
	Over weight permits & off highway - 16070.115	-	-	-	-	-	-	-	-	-	-	-	-	-
	Work & other recoveries - 16070.111	-	-	-	-	-	-	-	-	-	-	-	-	-

	Sundry Revenue - 16095.110	-	-	-	-	-	-	-	-	-	-	-	-	-
	Trade Waste Fees (Taupo) - 16095.116	-	-	-	-	-	-	-	-	-	-	-	-	-
	Grants & subsidies	**-**	**(540,000)**	**(640,000)**	**(640,000)**	**(652,800)**	**(667,136)**	**(2,812,656)**	**(696,128)**	**(710,080)**	**(723,584)**	**(737,344)**	**(751,360)**	**(764,864)**
3	Government grants & subsidies - operational – 18030	-	(540,000)	(640,000)	(640,000)	(652,800)	(667,136)	(681,856)	(696,128)	(710,080)	(723,584)	(737,344)	(751,360)	(764,864)
	Government grants & subsidies - capital/renewal – 18530	-	-	-	-	-	-	(2,130,800)	-	-	-	-	-	-
	Operation Revenue	**-**	**(9,319,338)**	**(11,406,174)**	**(11,406,174)**	**(15,946,043)**	**(16,779,585)**	**(18,154,941)**	**(17,122,354)**	**(17,425,884)**	**(17,655,203)**	**(17,967,798)**	**(18,257,761)**	**(18,625,678)**
	Revenue	**-**	**(9,319,338)**	**(11,406,174)**	**(11,406,174)**	**(15,946,043)**	**(16,779,585)**	**(18,154,941)**	**(17,122,354)**	**(17,425,884)**	**(17,655,203)**	**(17,967,798)**	**(18,257,761)**	**(18,625,678)**
	Expenditure													
8	**Depreciation and amortisation**	**-**	**324,363**	**329,761**	**329,761**	**364,993**	**648,728**	**685,804**	**989,867**	**1,001,371**	**1,013,065**	**1,025,021**	**1,037,157**	**1,049,561**
	Budgeted Depreciation – 20000	-	-	-	-	-	-	-	-	-	-	-	-	-
	Depreciation - Buildings – 20002	-	30,890	32,126	32,126	34,053	35,551	37,258	38,972	40,686	42,395	44,176	45,943	47,780
	Depreciation - Machinery & Plant - 20003	-	18,469	18,469	18,469	18,469	18,469	18,469	18,469	18,469	18,469	18,469	18,469	18,469
	Depreciation - Office Furniture - 20005	-	55,606	55,606	55,606	55,606	55,606	55,606	55,606	55,606	55,606	55,606	55,606	55,606
	Depreciation - Park Furniture & Play Equipment – 20006	-	-	-	-	-	-	13,139	161,142	161,142	161,142	161,142	161,142	161,142
	Depreciation - Office Equipment - 20007	-	2,182	2,182	2,182	2,182	2,182	2,182	2,182	2,182	2,182	2,182	2,182	2,182
	Depreciation - Computer owned Hardware – 20008	-	794	794	794	794	794	794	794	794	794	794	794	794
	Depreciation - Solid Waste – 20149	-	216,422	220,584	220,584	253,889	536,125	558,357	712,703	722,492	732,477	742,653	753,022	763,588
6	**Personnel costs**	**-**	**10,488**	**525,644**	**525,644**	**548,452**	**570,976**	**583,039**	**595,307**	**607,303**	**618,867**	**630,655**	**642,714**	**654,286**
	Salaries & wages – 22000	-	-	290,999	290,999	306,260	321,448	328,206	335,086	341,813	348,294	354,898	361,656	368,168
	Superannuation subsidy – 22110	-	-	8,647	8,647	9,097	9,548	9,749	9,953	10,153	10,346	10,542	10,743	10,936
	Timesheet costing wages – 22200	-	-	214,300	214,300	219,443	224,265	228,980	233,780	238,473	242,995	247,602	252,317	256,860

Timesheet recovery wages – 22210	-	-	-	-	-	-	-	-	-	-	-	-	-
ACC levies – 22400	-	-	1,693	1,693	1,814	1,946	2,033	2,121	2,209	2,300	2,395	2,492	2,537
Health & Safety – 22415	-	1,000	2,000	2,000	2,040	2,085	2,131	2,175	2,219	2,261	2,304	2,348	2,390
Professional Memberships - 22420	-	1,600	1,600	1,600	1,632	1,668	1,705	1,740	1,775	1,809	1,843	1,878	1,912
Uniforms - 22430	-	88	-	-	-	-	-	-	-	-	-	-	-
Accommodation & meals - 22600	-	2,500	-	-	-	-	-	-	-	-	-	-	-
Airfares - 22605	-	800	-	-	-	-	-	-	-	-	-	-	-
Staff training - 22700	-	-	6,405	6,405	8,166	10,015	10,236	10,451	10,660	10,863	11,069	11,280	11,483
Conferences - 22710	-	4,500	-	-	-	-	-	-	-	-	-	-	-
General operating expenditure	**-**	**85,040**	**189,060**	**189,060**	**135,270**	**139,592**	**144,134**	**148,742**	**153,455**	**158,262**	**163,316**	**168,634**	**174,083**
Vehicle insurance - 23100	-	-	2,661	2,661	2,927	3,220	3,542	3,896	4,286	4,715	5,186	5,705	6,275
Insurance premiums - other - 23105	-	-	6,796	6,796	7,818	8,600	9,460	10,406	11,446	12,591	13,850	15,235	16,759
Valuation fees - 23210	-	-	-	-	-	-	-	-	-	-	-	-	-
Debt Collection fees - 23215	-	500	300	300	306	313	320	326	333	339	346	352	359
Professional services - 23220	-	-	-	-	-	-	-	-	-	-	-	-	-
Business Unit Engineering Charges - 23230	-	-	-	-	-	-	-	-	-	-	-	-	-
Electricity - 23300	-	-	14,078	14,078	14,360	14,675	14,999	15,313	15,620	15,917	16,219	16,528	16,825
Water Rates - 23310	-	-	377	377	385	393	402	410	418	426	434	443	451
Rates - council owned properties - 23315	-	-	13,687	13,687	14,310	14,989	15,704	16,433	17,181	17,945	18,744	19,578	20,428
Regional Council Rates - 23320	-	-	5,557	5,557	5,810	6,086	6,375	6,672	6,975	7,286	7,610	7,948	8,293
Rent/Lease - Land - 23330	-	-	-	-	-	-	-	-	-	-	-	-	-
Cleaning - 23345	-	-	-	-	-	-	-	-	-	-	-	-	-
Rent/Lease Equipment - 23350	-	-	-	-	-	-	-	-	-	-	-	-	-
Landline call costs/line rental - 23400	-	2,350	2,550	2,550	2,601	2,658	2,717	2,774	2,829	2,883	2,938	2,994	3,048
Advertising - 23500	-	27,500	82,500	82,500	24,990	25,539	26,102	26,649	27,183	27,700	28,226	28,763	29,280
Software licensing - 23600	-	8,500	8,500	8,500	8,670	8,860	9,056	9,245	9,431	9,610	9,793	9,979	10,158

	Minimum lease payments operating leases - 23900	-	10,440	10,812	10,812	11,028	11,270	11,519	11,760	11,996	12,224	12,456	12,693	12,921
	Grants - 24100	-	15,000	15,000	15,000	15,300	15,636	15,981	16,316	16,643	16,959	17,282	17,610	17,927
	Sponsorships - 24105	-	19,000	19,000	19,000	19,380	19,806	20,243	20,666	21,081	21,481	21,890	22,306	22,707
	Levies Paid - 24505	-	-	-	-	-	-	-	-	-	-	-	-	-
	Subscriptions - 24515	-	850	-	-	-	-	-	-	-	-	-	-	-
	Printing & Stationery - 24525	-	900	1,100	1,100	1,122	1,147	1,172	1,196	1,220	1,244	1,267	1,291	1,315
	Courier and freight - 24535	-	-	-	-	-	-	-	-	-	-	-	-	-
	Bank fees - 24570	-	-	6,141	6,141	6,264	6,401	6,543	6,680	6,813	6,943	7,075	7,210	7,339
6	**Direct costs of activities**	**-**	**8,723,557**	**9,561,203**	**9,561,203**	**14,010,329**	**14,132,092**	**13,183,108**	**13,704,865**	**13,979,542**	**14,245,399**	**14,516,296**	**14,792,233**	**15,058,090**
	Contracts - 25000	-	160,000	-	-	-	-	-	-	-	-	-	-	-
	Consulting - 25300	-	90,000	65,000	65,000	66,300	67,756	69,251	70,701	72,118	73,489	74,887	76,310	77,682
	Plant Hire - 25500	-	-	-	-	-	-	-	-	-	-	-	-	-
5	Maintenance - 25700	-	16,000	21,000	21,000	21,420	21,890	22,373	118,559	120,936	123,235	125,579	127,966	130,266
5	Building Maintenance - 25710	-	8,000	15,500	15,500	15,810	16,157	16,514	16,859	17,197	17,524	17,858	18,197	18,524
5	Maintenance Machinery & Plant - 25720	-	11,000	16,000	16,000	16,320	16,678	17,046	17,403	17,752	18,090	18,434	18,784	19,122
5	Ground Maintenance - 25730	-	32,000	35,500	35,500	36,210	37,005	37,822	38,613	39,387	40,136	40,900	41,677	42,426
	Service delivery contracts - 26000	-	4,055,257	4,800,740	4,800,740	8,995,947	9,193,505	9,396,355	9,743,134	9,938,408	10,127,413	10,320,000	10,516,171	10,705,175
	Resource Consent Compliance - 26010	-	22,000	22,000	22,000	22,440	22,933	23,439	23,929	24,409	24,873	25,346	25,828	26,292
	Resource Consent Renewals - 26015	-	-	345,000	345,000	351,900	-	-	-	-	-	-	-	-
	Rubbish disposal - 26020	-	27,000	28,000	28,000	28,560	29,187	29,831	30,456	31,066	31,657	32,259	32,872	33,463
	TDC Regulatory fees - 26025	-	100,000	100,000	100,000	102,000	104,240	106,540	108,770	110,950	113,060	115,210	117,400	119,510
	Operating Levies Paid - 26030	-	1,500,000	1,800,000	1,800,000	1,836,000	1,876,320	1,917,720	1,957,860	1,997,100	2,035,080	2,073,780	2,113,200	2,151,180
	Emission Trading Scheme - 26040	-	2,639,000	2,223,490	2,223,490	2,426,670	2,653,674	1,451,425	1,481,805	1,511,504	1,540,249	1,569,539	1,599,374	1,628,119
	Materials & supplies - 27000	-	63,300	59,950	59,950	61,149	62,492	63,871	65,208	66,515	67,779	69,068	70,381	71,646
	Diesel - 27505	-	-	20,787	20,787	21,203	21,668	22,146	22,610	23,063	23,502	23,949	24,404	24,843
	Road user charges - 27510	-	-	1,389	1,389	1,417	1,448	1,480	1,511	1,541	1,570	1,600	1,631	1,660
	Vehicle Registration -	-	-	416	416	424	434	443	452	462	470	479	488	497

	27515												
	Vehicle Maintenance - 27520	-	-	5,354	5,354	5,461	5,581	5,704	5,824	5,940	6,053	6,168	6,286	6,399
	Vehicle Tyres - 27525	-	-	1,077	1,077	1,099	1,123	1,147	1,171	1,195	1,218	1,241	1,264	1,287
7	**Finance expense**	**-**	**109,023**	**100,374**	**100,374**	**161,211**	**209,736**	**349,068**	**490,429**	**462,761**	**434,511**	**403,103**	**372,452**	**344,410**
	Interest on borrowings - 28000	-	6,355	6,355	6,355	6,355	6,355	6,355	6,355	6,355	6,355	6,355	6,355	6,355
	Budget interest on borrowings (capex) - 28010	-	102,668	94,019	94,019	154,856	203,381	342,713	484,074	456,406	428,156	396,748	366,097	338,055
	Operating Expenditure	**-**	**9,252,471**	**10,706,041**	**10,706,041**	**15,220,255**	**15,701,123**	**14,945,153**	**15,929,210**	**16,204,432**	**16,470,105**	**16,738,391**	**17,013,190**	**17,280,430**
9	**Overhead allocation**	**-**	**93,539**	**531,797**	**531,797**	**564,351**	**578,462**	**578,988**	**593,144**	**621,452**	**585,097**	**629,407**	**644,571**	**645,248**
	Recharges in Infrastructure Asset Management - 33000	-	11,925	68,554	68,554	73,458	74,547	75,830	77,421	79,904	77,791	82,119	83,042	84,503
	Recharges in Stormwater & Solid Waste Administration - 33030	-	27,322	545,983	545,983	568,173	597,110	601,481	615,273	635,228	614,909	651,810	666,888	670,756
	Recharges in District Parks and Recreation Management - 34000	-	26,872	104,122	104,122	108,198	114,758	114,197	117,219	121,154	116,977	123,986	127,354	127,299
	Overheads in Property - Council Administration - 36010	-	12,563	20,752	20,752	22,264	21,678	22,069	22,632	23,174	23,256	23,781	24,338	24,881
	Overheads in Information Systems & Technology - 36020	-	33,272	78,255	78,255	76,038	74,739	75,342	76,965	77,074	54,322	79,272	75,999	76,740
	Overheads in Business Excellence - 36050	-	-	10,105	10,105	10,733	12,485	13,044	13,682	14,702	15,353	16,163	17,333	18,263
	Overheads in People & Capability - 36060	-	9,092	11,667	11,667	12,301	12,798	13,013	13,286	13,552	13,545	13,793	14,056	14,309
	Overheads in Finance - 36080	-	15,548	112,320	112,320	116,275	127,175	122,414	125,627	136,326	130,976	134,148	143,149	137,507
	Overheads in Customer Services - 36090	-	11,590	71,901	71,901	75,262	78,727	80,224	82,142	83,603	85,333	86,708	88,630	89,904
	Overheads in Communications - 36100	-	-	54,121	54,121	69,823	61,554	62,856	64,171	71,963	67,545	69,437	70,670	71,842
	Overheads Out - 37000	-	(54,644)	(545,983)	(545,983)	(568,173)	(597,110)	(601,481)	(615,273)	(635,228)	(614,909)	(651,810)	(666,888)	(670,756)
	Non-operating Expenditure	**-**	**93,539**	**531,797**	**531,797**	**564,351**	**578,462**	**578,988**	**593,144**	**621,452**	**585,097**	**629,407**	**644,571**	**645,248**
	Expenditure	**-**	**9,346,009**	**11,237,838**	**11,237,838**	**15,784,607**	**16,279,585**	**15,524,141**	**16,522,354**	**16,825,884**	**17,055,202**	**17,367,798**	**17,657,761**	**17,925,677**

	Revenue & Expenditure	-	26,671	(168,336)	(168,336)	(161,436)	(500,000)	(2,630,800)	(600,000)	(600,000)	(600,000)	(600,000)	(600,000)	(700,000)
	Revenue													
1	General Rates			(849,687)		(862,761)	(880,107)	(893,488)	(910,902)	(928,946)	(938,530)	(959,580)	(977,445)	(991,311)
2	Targeted Rates			(3,002,687)		(8,046,404)	(8,708,065)	(7,780,564)	(8,707,519)	(8,842,609)	(8,916,776)	(9,059,996)	(9,181,008)	(9,389,491)
3	Operating subsidies			(640,000)		(652,800)	(667,136)	(681,856)	(696,128)	(710,080)	(723,584)	(737,344)	(751,360)	(764,864)
4	Fees and charges			(6,913,800)		(6,384,078)	(6,524,277)	(6,668,232)	(6,807,806)	(6,944,250)	(7,076,312)	(7,210,879)	(7,347,949)	(7,480,011)
	Total Revenue			**(11,406,174)**		**(15,946,043)**	**(16,779,585)**	**(16,024,141)**	**(17,122,354)**	**(17,425,884)**	**(17,655,203)**	**(17,967,798)**	**(18,257,761)**	**(18,625,678)**
	Operating Expenses													
5	Maintenance Costs			88,000		89,760	91,731	93,755	191,435	195,272	198,986	202,770	206,624	210,338
6	Operations Costs			10,187,907		14,604,292	14,750,928	13,816,525	14,257,479	14,545,028	14,823,543	15,107,497	15,396,957	15,676,121
7	Interest on Borrowings			100,374		161,211	209,736	349,068	490,429	462,761	434,511	403,103	372,452	344,410
8	Depreciation			329,761		364,993	648,728	685,804	989,867	1,001,371	1,013,065	1,025,021	1,037,157	1,049,561
9	Overheads			531,797		564,351	578,462	578,988	593,144	621,452	585,097	629,407	644,571	645,248
	Total Operating Expenditure			**11,237,838**		**15,784,607**	**16,279,585**	**15,524,141**	**16,522,354**	**16,825,884**	**17,055,202**	**17,367,798**	**17,657,761**	**17,925,677**
	Net Deficit (Surplus) of Operations			(168,336)		(161,436)	(500,000)	(500,000)	(600,000)	(600,000)	(600,000)	(600,000)	(600,000)	(700,000)

10.0 ASSET MANAGEMENT PRACTICES

10.1 Current Asset Management Practices

This section outlines the decision-making tools Taupō District Council (TDC) currently uses to determine long term maintenance, renewal and creation expenditure for Solid Waste assets.

AM practices fall under three broad headings:

Processes: The necessary processes, analysis and evaluation techniques needed for life cycle asset management.

Information Systems: The information support systems used to store and manipulate the data.

Data: Data available for manipulation by information systems to produce the required outputs.

On-going NAMS training is provided to all staff involved in the production of the asset management plans to facilitate the best management of the assets.

Asset Management plans are compiled by individual asset managers responsible for their assets. Asset managers are also part of the Asset Management Team who work together to ensure quality outcomes. The team has key relationships with the policy division to make sure that customer expectations are understood as well as key outcomes are achieved. The Finance team also assist in the preparation of the finance section. Project information as well as overall budgeting is then passed to senior management to enable further analysis as well as support. Asset management plans are then presented to Council where further prioritisation occurs.

Due to an agreed financial strategy there is pressure on the amount of capex spend within the organisation. Asset managers are to prepare plans to operate and maintain their assets using best practise methods. Those plans will then be overlaid with other assets to determine if there are any synergies and to avoid "digging up the street twice".

The process from there will be to prioritise expenditure based around the financial constraints as well such things as Legislation, consent requirements and "nice to haves".

Any changes to plans will be documented and provided to the elected officials so that a complete record of the process is kept along with the decisions made.

10.2 Asset Management Processes

10.2.1 ATTRIBUTE DATA COLLECTION AND VALIDATION

Data collection is completed by:

- Councils network maintenance engineers providing updated asset information as maintenance works are completed.
- Facility operators alert Council of unplanned maintenance and renewal works
- Contractors supplying data where an asset is renewed or installed
- As built data from new works

Validation is completed by way of TDC auditing a number of contractor's work sheets as well as monthly contract meetings where asset performance and condition are assessed.

10.2.2 NEW DEVELOPMENT APPROVALS/AS-BUILT RECORDS

The Development Engineer approves completed works for new developments and ensures that the following people are issued a copy of all final documents, e.g. plans, pipe and manhole testing results.

- GIS – via the GIS help desk email address
- Asset Management Systems Officer (who will discuss any issues with the Asset Manager if required).

This process has little impact on the solid waste network as the facilities are stand alone and the infrastructure is usually not influenced by private developments apart from the need to service the urban lots for refuse and recycling collection.

10.2.3 PROCUREMENT

Councils have developed a procurement framework that requires differing process for differing expenditure values. The Procurement manure can be found in Objective database.

10.2.4 LEVEL OF SERVICE CONSULTATION

The level of service consultation provides feedback from residents and ratepayers of the Taupō District. The responses from this consultation provide input into how the asset is managed.

Levels of service will be consulted on as part of the Long-Term Plan (LTYP).
A level of service consultation has been undertaken for litter in the district with most submitters looking for a small increase in service levels.

The overall service delivery will also be consulted on as a part of the development of the Waste management and minimisation plan.

10.2.5 INFORMATION FROM CONTRACTORS

Processes for collection of data (maintenance, condition, new assets, renewals, performance etc) clearly defined and efficiently administered through asset maintenance contracts. Monthly performance meetings consider asset condition and effects on levels of service.

10.2.6 STANDARD OPERATING PROCEDURES

Standard Operating Procedures are being developed to assist in the operation and maintenance of assets. This process is ongoing with new procedures being developed as the need arises and updates being made as required. The Broadlands Rd landfill has a site management plan that identifies site operational issues that need to be managed, but most of these requirements are part of the facility operational contract documents and resource consent.

10.2.7 ASSET MANAGEMENT ACCOUNTING AND ECONOMICS

Infrastructure assets are those public facilities which provide for the delivery of services and sustained standard of living. They primarily comprise the Council's fixed utility systems including roads, streets and footpaths, the water and sewerage reticulation systems refuse / recycling facilities, the Stormwater system, bridges and culverts.

Infrastructure assets are deemed to have the following attributes:

- they are large networks constructed over several generations;
- they have very long useful economic lives;

- they have a high initial cost;
- they provide a benefit and/or a social service but can also provide a commercial service, i.e. the assets are used by or for the community as a whole, servicing all the town's residents and visitors. The assets are not usually capable of subdivision for ready disposal, because of legal or other restrictions, and consequently are not readily disposable within the commercial marketplace;
- Assets are not normally depleted as their service capability is fully maintained in perpetuity, i.e. they are expected to have an indefinite life if adequately maintained although portions of the network will be replaced from time to time. The Broadlands Rd Landfill will continue to be developed, as current cells fill new disposal cells need to be constructed.

Assets are systematically evaluated as required, approximately every three years.

Depreciated replacement cost is calculated having regard to an allowance for the expired portion of the expected useful economic life for each category of infrastructure asset.

TDC uses the principles of accrual accounting to measure costs of services provided and recognise revenues.

Renewal accounting treats all upgrading, reconstruction, renewal and renovation work which does not increase the capacity or service potential of assets as operating expenditure.

Operating expenditure can be divided into two broad categories; normal ongoing day to day routine maintenance works, and those other more infrequent larger projects that upgrade or renew the asset to its previous service potential.

Creation expenditure involves increases in an asset's service potential or the creation of new assets.

All expenditure on infrastructure assets will therefore fall into one of three categories:

10.2.7.1 Routine Maintenance Expenditure

Routine maintenance projects can be expected to display some or all of the following characteristics:

- regular and ongoing annual expenditure necessary to keep the assets at their required service potential,
- day to day and/or general upkeep works designed to keep the assets operating at required levels of service,
- works which provide for the normal care and attention of the asset including repairs and minor replacements,
- Minor response type remedial works i.e., isolated failures requiring immediate repair to make the asset operational again.

10.2.7.2 Renewal Expenditure

Work displaying one or more of the following attributes, can be classified as renewal expenditure.

- works which do not increase the capacity or service potential of the asset, i.e. works which upgrade and enhance the assets restoring them to their original size, condition, capacity etc,

- the replacement component of augmentation works which increase the capacity of the asset, i.e. that portion of the work which restores the assets to their original size, condition, capacity etc.,
- the replacement component of a new work which replaces the redundant element of an existing asset,
- reconstruction or rehabilitation components of works involving improvements, realignment and re-grading,
- renewal and/or renovation of existing assets, i.e., restoring the assets to a new or fresh condition.

10.2.7.3 New Works Expenditure

New works expenditure projects displaying one or more of the following characteristics:

- construction works which create a new asset that did not previously exist in any shape or form,
- expenditure which purchases or creates a new asset (not a replacement) or in any way improves an asset beyond its original design capacity,
- upgrade works which increase the capacity of the asset,
- construction works designed to produce an improvement in the standard and operation of the asset beyond its current capacity.

To the extent that a project results in replacement of an asset caused by physical deterioration, and also provides capacity for increased demand, proportions should be allocated to both creation and renewals on the basis of marginal cost.

It is recommended that the split between creation and renewal expenditure is based on marginal cost. This recognises the full cost of renewing the existing asset to its original service potential is an expense as this expenditure cost does not contribute to improving the asset beyond its original design capacity.

10.2.8 THE LONG TERM PLAN PROCESS

The long Term Plan (LTP) process considers the community outcomes, statutory requirements, the headline indicators and external pressures to determine what Council can or should be doing to help the community work towards its desired future.

The LTP also contains an action plan that sets out how Council will undertake its strategic goals and details the specific activities, functions and initiatives undertaken in the short term (three years) and long term (10 years).

The LTP draws on information from other documents including the Asset Management Plans and models it in financial terms over a ten year horizon and is updated every three years.

10.2.9 THE ANNUAL PLAN PROCESS

The Annual Plan is an action plan that sets out how Council will undertake its strategic goals and details the specific activities, functions and initiatives undertaken. It is produced in the years when a LTP is not. It will also outline deviations from the LTP.

10.2.10 STANDARDS AND GUIDELINES

For landfill operations there are standards and guidelines that are available to ensure that Council is following 'best practice'. This includes national standards on refuse compaction, Leachate handling, new cell build guidelines and on site transfer station set up.
Whereas Acts and Regulations determine minimum levels of service, standards and guidelines provide the means of compliance with specific levels of service.

10.3 Asset Management Information Systems

10.3.1 ASSET MANAGEMENT SYSTEM

Council is in the process of downloading all of the asset data for solid waste into Asset- Finda but this process has had to wait until council has finalised the Three Waters upgrade process.

Litter and street recycling bin data has been uploaded into Asset Finda. Data includes location and condition.

Currently Solid Waste data is held on the financial database and is updated as capital and renewal expenditure works are undertaken.

10.3.2 GIS

Solid Waste data from asbuilt records are placed into GIS if they relevant, data such as cell design data is kept in objective.

10.3.3 SERVICE REQUEST SYSTEM

This is the system used by Council to record customer complaints, comments or compliments. The information is entered into the system when a customer calls and the call will be categorised depending the issue. Council Staff are tasked with completing these requests within a certain timeframe.

Service requests in some instances, such as the kerbside collection contract, can be straight to the contractor and signed off by them once the issue has been resolved.

10.3.4 ASSET VALIDATION BY CONTRACTORS

Data from any new works or renewal works undertaken at waste facilities is collected on a daily basis by maintenance and capital works contractors.

The Solid waste cost centre does not collect development contributions as facility costs are funded by rates and fees and charges.

10.3.5 LABORATORY DATA

Council has recently changed the Lab services, and Urofins now collect bore data which is then sent to Opus consultants to provide analysis and recommendations based on the data. Data is kept in Councils document records system, and is also passed onto the Regional Council as required by the resource consents. Council and Opus International store all monitoring records from site monitoring.

10.3.6 PROMAPP

Promapp is a procedure development programme that is being used to develop standard operating procedures for all Council business.

10.3.7 OBJECTIVE

Objective is Council's electronic document management system. All information relating to Council business is saved in this system for easy retrieval when required. This includes incoming and outgoing correspondence especially emails and letters. Council now only holds electronic copies for the majority of correspondence.

Soon to be replaced with a new document management system.

10.4 Data

10.4.1 ACCOUNTING COST DATA

Cost data for the asset groups are identified in the accounting records.

The work category type (maintenance, renewals, and new works) is identified. Marginal costs are only separately identified for significant works. Minor asset expenditure may not be separately identified.

Visual inspection to verify quantities for payment for routine maintenance and renewal tasks is undertaken by the asset engineer along with the asset manager.

10.4.2 GROWTH MODEL

The growth model is updated on an annual basis to reflect changes in development patterns. This model predicts the spread and level of growth within the Taupō District Council Areas. This model assists Asset Managers in planning forward works for their respective assets. The growth model uses census data as well as demand figures form subdivisions and building consents to provide asset managers with numbers that may affect service delivery.

Asset Valuation

The asset valuation provides a three-yearly update of the value of the Solid Waste Assets. New assets or disposed of assets are taken into account at this time.

10.4.3 CONDITION ASSESSMENT

Condition assessments are carried out by both contractors and council staff. This process is both formal and informal, due to the high level of public interface with council facilities the condition assessment process is at least fortnightly.

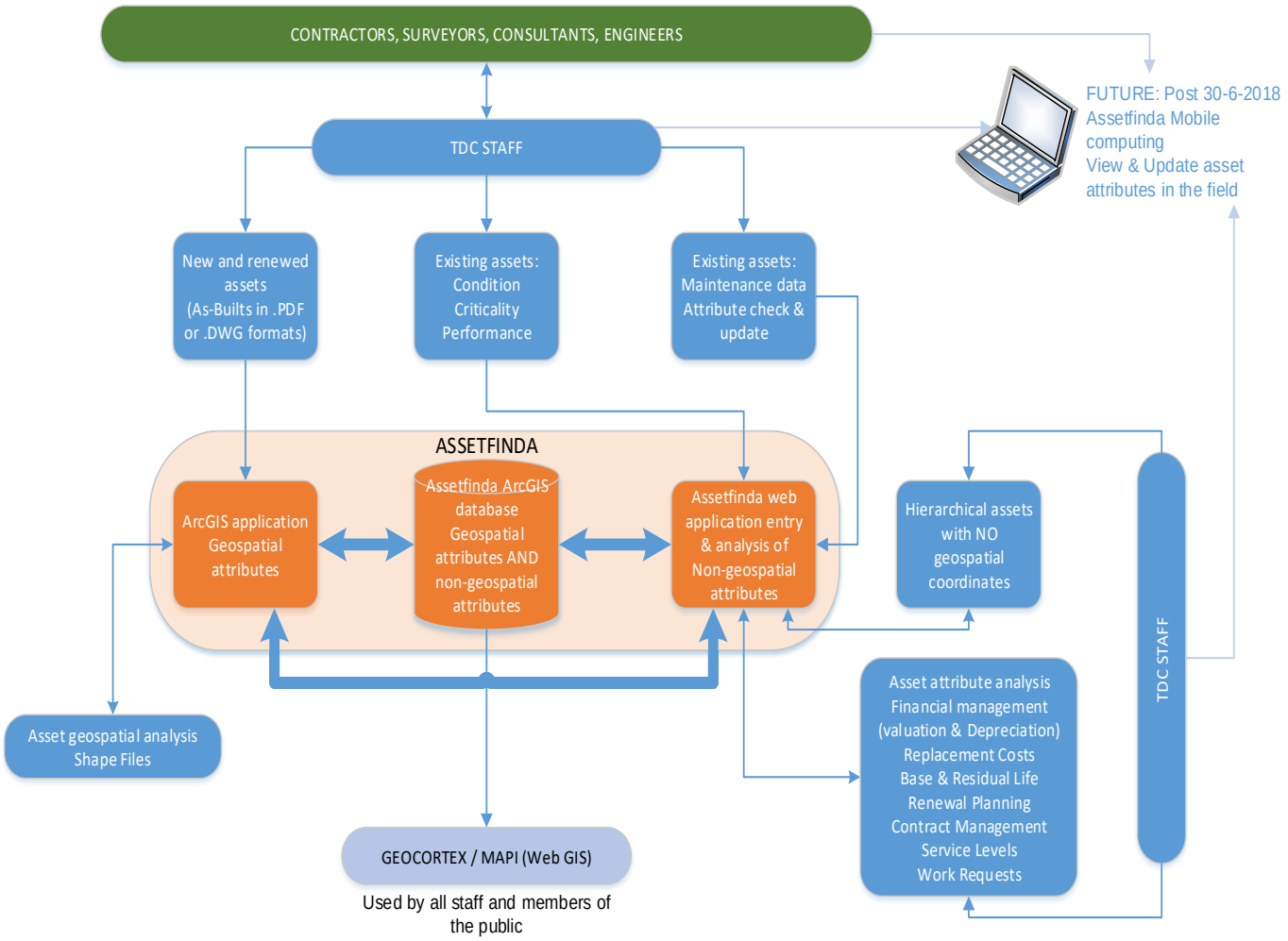


Figure 10-1: Asset Management System / GIS Data Recording Flow

10.4.4 DATA QUALITY ASSURANCE

The following are quality assurance regimes:

- Data Collection:
  - The contractor is responsible for GPS data collection following council standards (council doesn't accept any data with more than 0.3 m error in GPS coordinates).
  - TDC staff is continuously collecting data for historical assets which are updated after verification.
  - Project management team provides as built and field data and advise AMS team to update the information in asset register and or GIS.
- Data entry: Currently council is doing manual entry of the data using ArcGIS import capabilities CAD files and PDF files.
- Data maintenance: This is partially done by council staff whenever the contractor finds any variance in existing data and physical asset in the ground. As regards to the WWTP and pump stations operating staff and contractors staff are continuously validating and updating the conditions of the asset and informing the AMS team. In future it is envisaged that some efficiency will be developed with upgrade of

AssetFinda and field staff will be able to update asset attributes directly and it will be validated using quality assurance protocol developed at that time.

10.5 Asset Management Policy

Asset Management Policy

PURPOSE

The Asset Management Policy supports Council's long term strategic goals found in the 2021 LTP of:

- Ensure that the Taupo District remains a great place to live
- Promote economic development
- Protect our water resources and use them wisely
- Maintain the quality infrastructure that we have
- Keep rates and debt affordable

OBJECTIVE

The objective of Council's Asset Management Policy is to:

- ensure service delivery is optimized to deliver agreed community outcomes and levels of service for both residents, visitors and the environment
- optimize expenditure over the life cycle of the assets
- risks are managed appropriately
- provide a service delivery that is sustainable

PRINCIPLES

The following principles will be used by Council to guide asset management planning and decision making:

- effective consultation to determine appropriate levels of service
- Integration of asset management within Council's strategic, tactical and operational planning frameworks including corporate, financial, and business planning
- Informed decision making using a lifecycle and risk management and inter-generational approach
- Transparent and accountable asset management decision making
- Sustainable management of assets for present and future needs

CORPORATE FRAMEWORK

This Asset Management Policy links to Council's LTP, Infrastructure and Financial Strategy and Asset Management Plans. It builds on Council's strategic goals by promoting an integrated approach to the management of service delivery and across all asset classes.

STRUCTURED ASSESSMENT of ASSET MANAGEMENT PRACTICE

Council has undertaken a structured assessment of the appropriate level of asset management practice for each of the asset classes. This structured assessment follows the guidelines provided in Section 2.1.3 of the International Infrastructure Manual (IIMM 2011v4). IMPLEMENTATION and REVIEW of POLICY

This Asset Management Policy has been implemented in 2015. The next full review of this Asset Management Policy shall be completed in June 2023 prior to completing asset management plan updates to support the 2024 LTP.

MATURITY ASSESSMENT

In the first quarter of 2021 the maturity level of each of the Asset Management Plans has been assessed through an external review process to determine the actual level of maturity. This review will form the basis for the further refinement of each of the AMP's Improvement plans.

11.0 ASSET MANAGEMENT PRACTICES

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- Assets are not normally depleted as their service capability is fully maintained in perpetuity, i.e. they are expected to have an indefinite life if adequately maintained although portions of the network will be replaced from time to time. The Broadlands Rd Landfill will continue to be developed, as current cells fill new disposal cells need to be constructed.

Assets are systematically evaluated as required, approximately every three years.

Depreciated replacement cost is calculated having regard to an allowance for the expired portion of the expected useful economic life for each category of infrastructure asset.

TDC uses the principles of accrual accounting to measure costs of services provided and recognise revenues.

Renewal accounting treats all upgrading, reconstruction, renewal and renovation work which does not increase the capacity or service potential of assets as operating expenditure.

Operating expenditure can be divided into two broad categories; normal ongoing day to day routine maintenance works, and those other more infrequent larger projects that upgrade or renew the asset to its previous service potential.

Creation expenditure involves increases in an asset's service potential or the creation of new assets.

All expenditure on infrastructure assets will therefore fall into one of three categories:

11.2.7.1 Routine Maintenance Expenditure

Routine maintenance projects can be expected to display some or all of the following characteristics:

- regular and ongoing annual expenditure necessary to keep the assets at their required service potential,

- day to day and/or general upkeep works designed to keep the assets operating at required levels of service,
- works which provide for the normal care and attention of the asset including repairs and minor replacements,
- Minor response type remedial works i.e., isolated failures requiring immediate repair to make the asset operational again.

11.2.7.2 Renewal Expenditure

Work displaying one or more of the following attributes, can be classified as renewal expenditure.

- works which do not increase the capacity or service potential of the asset, i.e. works which upgrade and enhance the assets restoring them to their original size, condition, capacity etc,
- the replacement component of augmentation works which increase the capacity of the asset, i.e. that portion of the work which restores the assets to their original size, condition, capacity etc.,
- the replacement component of a new work which replaces the redundant element of an existing asset,
- reconstruction or rehabilitation components of works involving improvements, realignment and re-grading,
- renewal and/or renovation of existing assets, i.e., restoring the assets to a new or fresh condition.

11.2.7.3 New Works Expenditure

New works expenditure projects displaying one or more of the following characteristics:

- construction works which create a new asset that did not previously exist in any shape or form,
- expenditure which purchases or creates a new asset (not a replacement) or in any way improves an asset beyond its original design capacity,
- upgrade works which increase the capacity of the asset,
- construction works designed to produce an improvement in the standard and operation of the asset beyond its current capacity.

To the extent that a project results in replacement of an asset caused by physical deterioration, and also provides capacity for increased demand, proportions should be allocated to both creation and renewals on the basis of marginal cost.

It is recommended that the split between creation and renewal expenditure is based on marginal cost. This recognises the full cost of renewing the existing asset to its original service potential is an expense as this expenditure cost does not contribute to improving the asset beyond its original design capacity.

11.2.8 THE LONG TERM PLAN PROCESS

The long Term Plan (LTP) process considers the community outcomes, statutory requirements, the headline indicators and external pressures to determine what Council can or should be doing to help the community work towards its desired future.

The LTP also contains an action plan that sets out how Council will undertake its strategic goals and details the specific activities, functions and initiatives undertaken in the short term (three years) and long term (10 years).

The LTP draws on information from other documents including the Asset Management Plans and models it in financial terms over a ten year horizon and is updated every three years.

11.2.9 THE ANNUAL PLAN PROCESS

The Annual Plan is an action plan that sets out how Council will undertake its strategic goals and details the specific activities, functions and initiatives undertaken. It is produced in the years when a LTP is not. It will also outline deviations from the LTP.

11.2.10 STANDARDS AND GUIDELINES

For landfill operations there are standards and guidelines that are available to ensure that Council is following 'best practice'. This includes national standards on refuse compaction, Leachate handling, new cell build guidelines and on site transfer station set up.
Whereas Acts and Regulations determine minimum levels of service, standards and guidelines provide the means of compliance with specific levels of service.

11.3 Asset Management Information Systems

11.3.1 ASSET MANAGEMENT SYSTEM

Council is in the process of downloading all of the asset data for solid waste into Asset- Finda but this process has had to wait until council has finalised the Three Waters upgrade process.

Litter and street recycling bin data has been uploaded into Asset Finda. Data includes location and condition.

Currently Solid Waste data is held on the financial database and is updated as capital and renewal expenditure works are undertaken.

11.3.2 GIS

Solid Waste data from asbuilt records are placed into GIS if they relevant, data such as cell design data is kept in objective.

11.3.3 SERVICE REQUEST SYSTEM

This is the system used by Council to record customer complaints, comments or compliments. The information is entered into the system when a customer calls and the call will be categorised depending the issue. Council Staff are tasked with completing these requests within a certain timeframe.

Service requests in some instances, such as the kerbside collection contract, can be straight to the contractor and signed off by them once the issue has been resolved.

11.3.4 ASSET VALIDATION BY CONTRACTORS

Data from any new works or renewal works undertaken at waste facilities is collected on a daily basis by maintenance and capital works contractors.

The Solid waste cost centre does not collect development contributions as facility costs are funded by rates and fees and charges.

11.3.5 LABORATORY DATA

Council has recently changed the Lab services, and Urofins now collect bore data which is then sent to Opus consultants to provide analysis and recommendations based on the data. Data is kept in Councils document records system, and is also passed onto the Regional Council as required by the resource consents. Council and Opus International store all monitoring records from site monitoring.

11.3.6 PROMAPP

Promapp is a procedure development programme that is being used to develop standard operating procedures for all Council business.

11.3.7 OBJECTIVE

Objective is Council's electronic document management system. All information relating to Council business is saved in this system for easy retrieval when required. This includes incoming and outgoing correspondence especially emails and letters. Council now only holds electronic copies for the majority of correspondence.

Soon to be replaced with a new document management system.

11.4 Data

11.4.1 ACCOUNTING COST DATA

Cost data for the asset groups are identified in the accounting records.

The work category type (maintenance, renewals, and new works) is identified. Marginal costs are only separately identified for significant works. Minor asset expenditure may not be separately identified.

Visual inspection to verify quantities for payment for routine maintenance and renewal tasks is undertaken by the asset engineer along with the asset manager.

11.4.2 GROWTH MODEL

The growth model is updated on an annual basis to reflect changes in development patterns. This model predicts the spread and level of growth within the Taupō District Council Areas. This model assists Asset Managers in planning forward works for their respective assets. The growth model uses census data as well as demand figures form subdivisions and building consents to provide asset managers with numbers that may affect service delivery.

Asset Valuation

The asset valuation provides a three-yearly update of the value of the Solid Waste Assets. New assets or disposed of assets are taken into account at this time.

11.4.3 CONDITION ASSESSMENT

Condition assessments are carried out by both contractors and council staff. This process is both formal and informal, due to the high level of public interface with council facilities the condition assessment process is at least fortnightly.

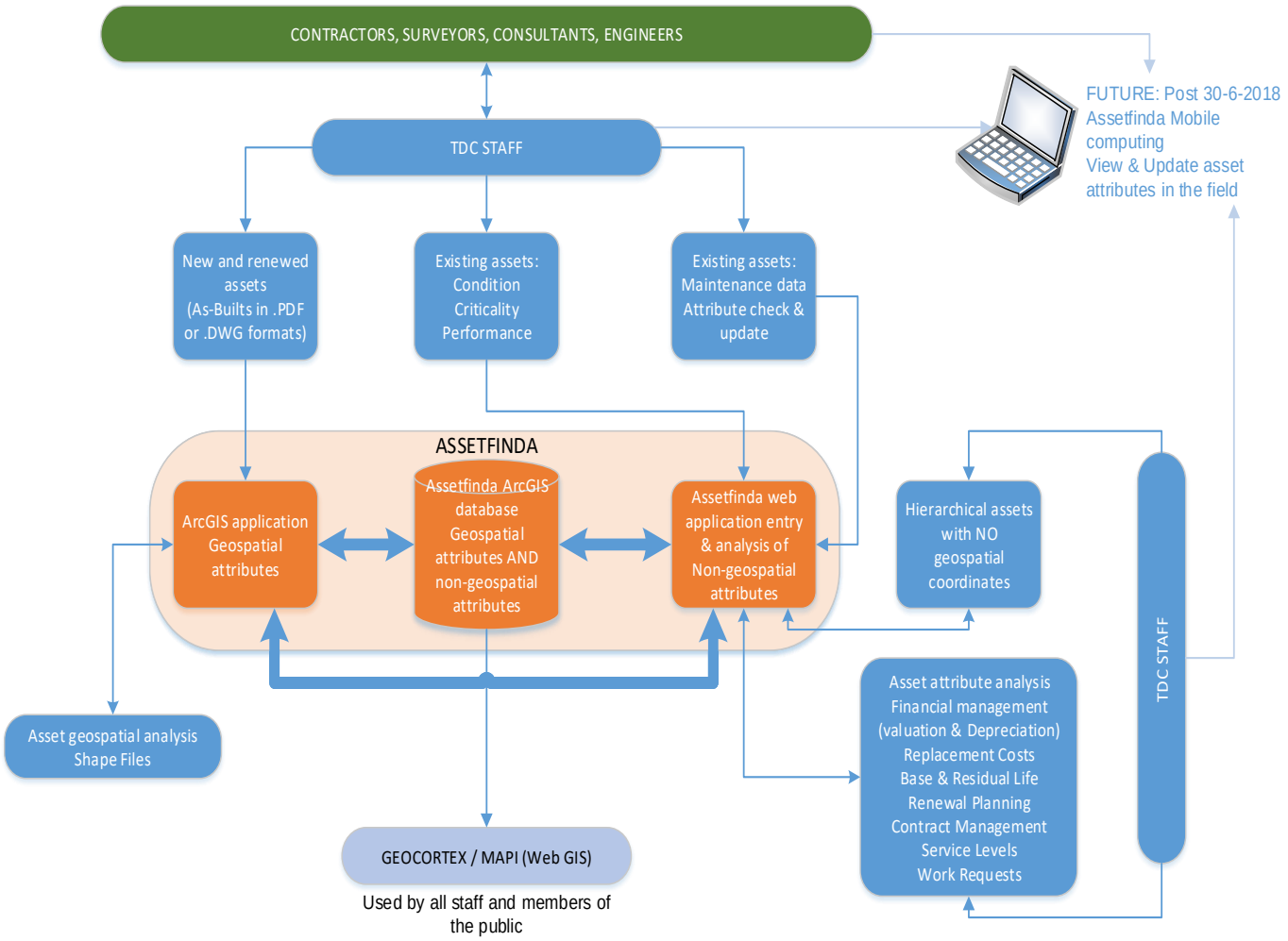

Figure 11-1: Asset Management System / GIS Data Recording Flow

11.4.4 DATA QUALITY ASSURANCE

The following are quality assurance regimes:

- Data Collection:
  - The contractor is responsible for GPS data collection following council standards (council doesn't accept any data with more than 0.3 m error in GPS coordinates).
  - TDC staff is continuously collecting data for historical assets which are updated after verification.
  - Project management team provides as built and field data and advise AMS team to update the information in asset register and or GIS.
- Data entry: Currently council is doing manual entry of the data using ArcGIS import capabilities CAD files and PDF files.
- Data maintenance: This is partially done by council staff whenever the contractor finds any variance in existing data and physical asset in the ground. As regards to the WWTP and pump stations operating staff and contractors staff are continuously validating and updating the conditions of the asset and informing the AMS team. In future it is envisaged that some efficiency will be developed with upgrade of

AssetFinda and field staff will be able to update asset attributes directly and it will be validated using quality assurance protocol developed at that time.

11.5 Asset Management Policy

Asset Management Policy

PURPOSE

The Asset Management Policy supports Council's long term strategic goals found in the 2021 LTP of:

- Ensure that the Taupo District remains a great place to live
- Promote economic development
- Protect our water resources and use them wisely
- Maintain the quality infrastructure that we have
- Keep rates and debt affordable

OBJECTIVE

The objective of Council's Asset Management Policy is to:

- ensure service delivery is optimized to deliver agreed community outcomes and levels of service for both residents, visitors and the environment
- optimize expenditure over the life cycle of the assets
- risks are managed appropriately
- provide a service delivery that is sustainable

PRINCIPLES

The following principles will be used by Council to guide asset management planning and decision making:

- effective consultation to determine appropriate levels of service
- Integration of asset management within Council's strategic, tactical and operational planning frameworks including corporate, financial, and business planning
- Informed decision making using a lifecycle and risk management and inter-generational approach
- Transparent and accountable asset management decision making
- Sustainable management of assets for present and future needs

CORPORATE FRAMEWORK

This Asset Management Policy links to Council's LTP, Infrastructure and Financial Strategy and Asset Management Plans. It builds on Council's strategic goals by promoting an integrated approach to the management of service delivery and across all asset classes.

STRUCTURED ASSESSMENT of ASSET MANAGEMENT PRACTICE

Council has undertaken a structured assessment of the appropriate level of asset management practice for each of the asset classes. This structured assessment

follows the guidelines provided in Section 2.1.3 of the International Infrastructure Manual (IIMM 2011v4).

IMPLEMENTATION and REVIEW of POLICY

This Asset Management Policy has been implemented in 2015. The next full review of this Asset Management Policy shall be completed in June 2023 prior to completing asset management plan updates to support the 2024 LTP.

MATURITY ASSESSMENT

In the first quarter of 2021 the maturity level of each of the Asset Management Plans has been assessed through an external review process to determine the actual level of maturity. This review will form the basis for the further refinement of each of the AMP's Improvement plans.