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Waste Management and Minimisation Plan

2022-2028

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PART A

1 Executive Summary

Everyone has a role to play to reduce waste and its impact on the cultural, social, economic, and environmental wellbeing of our communities. Fortunately, we have leaders in our community, including in our marae, schools, businesses, and at home, who are waste champions.

Our role at Tauranga City Council (TCC) is to promote effective and efficient waste minimisation within our city. We do this by providing waste services and facilities, funding innovative waste reduction initiatives, and educating our community to enable behaviour changes. By collaborating with private industry in providing sustainable solutions for various recoverable materials, TCC can provide Tauranga residents and businesses with economical and sustainable long term solutions for waste management that also have direct environmental benefits.

To support this work, TCC is required to adopt a Waste Management and Minimisation Plan (WMMP) that sets the vision, goals, objectives, targets, and action plan, for achieving efficient and effective waste management and minimisation over the next six years (2022-2028)[1] within our city. The WMMP also provides information on how TCC intends to fund the activities of the WMMP.

This will be the third WMMP that TCC has adopted, with reviews occurring at least every six years. The current WMMP was adopted in August 2016. At that time, we identified that the status quo wasn't working. Since then, as a city, we've taken significant steps to implement changes. This includes:

- continuing with a wide-ranging education and behaviour change programme with over 90 schools, 60 businesses, and hundreds of residents engaged.
- successfully rolling out the new household kerbside service on the 1 July 2021. This has already resulted in households diverting approximately 50% of all waste from the landfill, up from approximately 30%. A massive achievement and this will go a long way to reducing our waste to landfill volumes when comparing them to previous years.
- diverting 66% of our biosolids from landfill.
- progressing work to upgrade our Te Maunga Transfer Station to a more comprehensive Resource Recovery Park.

But there is still more work to be done.

Aotearoa New Zealand is one of the highest generators of waste per person in the world. In 2018, we collectively sent 3.7 million tonnes of waste to municipal landfills (approximately 750 kilograms per person).

[1] Section 43 of the Waste Minimisation Act 2008 (WMA).

This is 49 per cent higher than the Organisation for Economic Co-operation and Development (OECD) average of 538 kilograms per capita[2].

Locally, we are even worse and send the equivalent of 1,226 kilograms per person of waste to landfill each year[3]. In total, last year Tauranga disposed over 180,000 tonnes of waste to landfills and cleanfills. That is 35,000 more tonnes than we disposed in 2015.

The most significant issue facing Tauranga, and indeed Aotearoa New Zealand, is that we are still sending the majority of our waste to landfill when it could be diverted. This applies to all waste streams, including commercial, industrial, and residential. But we also don't know what we don't know. For example, the total volumes for Tauranga above do not include waste that was not processed at a TCC facility. We understand that this is at least another 60,000 tonnes of cleanfill waste processed at facilities not operated by TCC per annum. Which is up to an additional 407 kilograms per person.

This lack of clarity is not restricted to Tauranga. Reliable data and reporting continue to be an issue in the waste industry nationwide. This means that not all sources of waste are recorded accurately. While the Government is looking at improvements within this space, which will standardise mandatory reporting requirements, we will need to continue to focus on data collection and reporting over the next couple of years. This will allow us to target and influence specific waste streams from various sectors. Such as the construction and demolition industry and hospitality industry.

Having reviewed progress against the 2016 WMMP and considering the change in waste quantities and emerging events since the last WMMP, TCC have identified the following key waste issues that need to be addressed in the next WMMP:

1. The way we currently consume products leads to large quantities of waste.
2. There is a high volume of household waste going to landfill that could be diverted.
3. The proportion of our community living in multi-unit dwellings is growing.
4. Litter and illegal dumping, which has environmental and financial costs, is increasing.
5. Businesses and organisations need better services to divert waste from landfill.
6. There is a high volume of construction and demolition material going to landfill.
7. Disposing of biosolids to landfill affects cultural, environmental, social, and economic values.
8. Cost and volume uncertainty has risen due to legislation change or service interruption.
9. Unforeseen events can result in high volumes of waste in a short period.

In addition to the identified issues above, we recognise that there are two additional issues that touch all of the issues raised above and therefore, are not standalone issues in themselves. These are:

- That the generation, management, and minimisation activities from waste are fluid. It is often generated in one district, then transferred and/or consolidated in another district, before being disposed somewhere else. Waste is also often transferred through districts.
- Lack of recognition of Te Tiriti o Waitangi (Te Tiriti) and te ao Māori. The 2016 WMMP did not contain any reference to Te Tiriti o Waitangi or te ao Māori. These are notable gaps in modern environmental legislation for Aotearoa, which has been recognised in the Governments proposed

[2] Ministry for the Environment. 2021. *Te kawe i te haepapa para | Taking responsibility for our waste: Proposals for a new waste strategy; Issues and options for new waste legislation*. Wellington: Ministry for the Environment.
[3] Tauranga City Council Waste Assessment, November 2021.

Waste Strategy and Legislation.

We have drafted the WMMP to respond to the above emerging issues and forecasted demands identified in the Waste Assessment, and the recent Government consultation on waste.

The proposed vision to "**reduce waste to landfill**". In our view, it achieves a number of outcomes including promoting the waste hierarchy, maximising the diversion of waste, and a transition to a circular economy. It is also measurable.

While we considered the option of an ambitious "zero waste" vision, it was decided that in the six year lifetime of this WMMP it was unachievable. However, as part of the broader TCC Strategic Framework Refresh project, TCC is currently proposing a purposely long-term and aspirational vision of a zero waste city.

Where we have been ambitious is in setting targets so that we are accountable. These targets align with the targets put forward by the Government in its waste consultation documents. This includes, by 2027/28:

- Reduce household kerbside waste disposed to landfill to 75kg/capita (a reduction of 62.5% from the 2021 baseline of 200kg/capita).
- Recover 7,500 tonnes of food waste per annum (based on recovering approximately 48kg/capita of food waste from a projected population of 165,411 people).
- Improve household kerbside rubbish diversion rates from 48% to 10%.
- Reduce waste sent to landfill from the Te Maunga Resource Recovery Park to 29,974 tonnes (from the 2021 baseline of 57,500 tonnes).
- Recover 50,000 tonnes of construction and demolition waste per annum at the Te Maunga Resource Recovery Park.
- Divert 100% of biosolids from landfill per annum.

Achieving the targets and resolving the issues requires an action plan. Within the draft WMMP we have proposed a "living" plan that can be regularly updated to reflect current actions and progress. The action plan will be reviewed and updated annually based on waste data collection and reporting. We will report to Council on progress of our action plan and targets on a quarterly basis and share the results with our community. This ensures that TCC remains agile and able to adapt and respond to any unforeseen or emerging issues, or changes in resource recovery nationally and internationally, including but not limited to, legislative and technological.

Overall, the WMMP sets out how TCC and the community can work together to achieve our vision, goals, objectives, and targets. It provides clear, practical initiatives that TCC will implement, either on our own or jointly, to take responsibility for our waste in the City.

2 Background Information and Introduction

Section 43 of the Waste Minimisation Act 2008 (WMA) requires that Territorial Authorities must adopt a Waste Management and Minimisation Plan (WMMP) that gives councils the responsibility to promote effective and efficient waste management and minimisation within their district. Reviews of the WMMP must occur at least every six years.

The previous WMMP was adopted in August 2016 as the second WMMP prepared by Tauranga City Council (TCC), with the first being a joint WMMP with the Western Bay of Plenty District Council that was adopted in

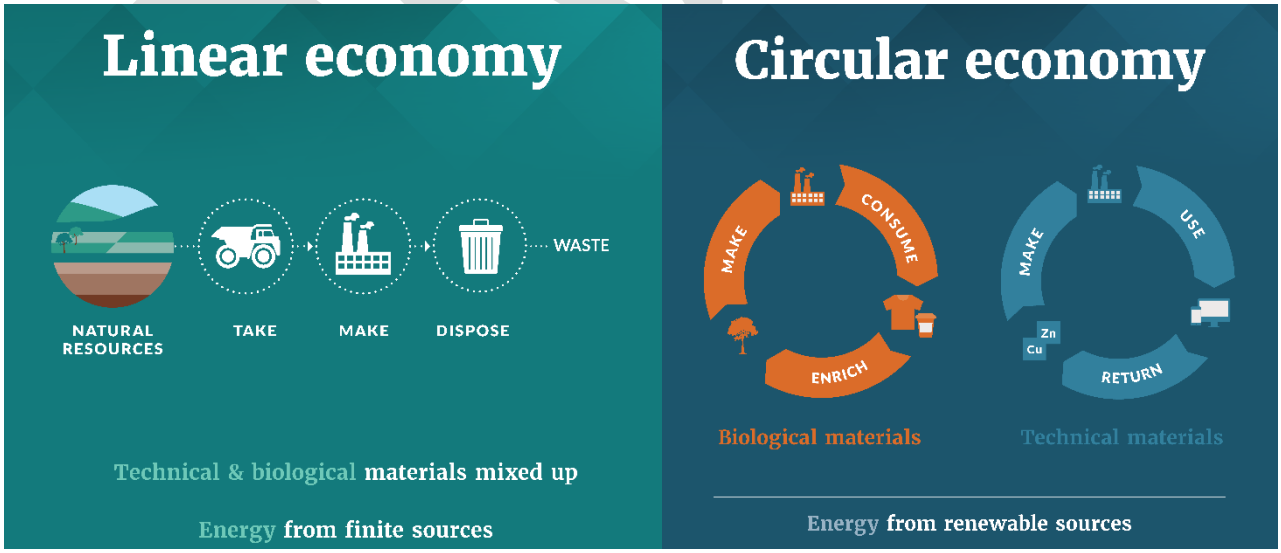
2010.

The first step in reviewing a WMMP is the preparation of a Waste Assessment, which helps identify what we have done and continue to do, and the impact these actions made on diverting waste to landfill. As well as the actions we did not undertake or targets we did not achieve from the 2016 WMMP. The Waste Assessment identifies any outstanding or emerging issues that need to be addressed by a new WMMP. This includes preparing a statement of options available to meet the forecast demands of waste within our City with an assessment of the suitability of each option. A copy of the Waste Assessment is attached as Appendix A to this WMMP.

In early 2021, TCC engaged Morrison Low to prepare a draft Waste Assessment and draft WMMP. The initial plan was to prepare these documents for consultation alongside the Long Term Plan 2021 – 2031. However, due to staff changes and the focus on rolling out the kerbside service in July, this process was delayed. Additionally, with the announcements from Government that the Waste Strategy 2010 and WMA would be reviewed in late-2021 (discussed further below), TCC decided to postpone public consultation until early 2022. This would allow us to align the 2022-2028 WMMP with the overall direction proposed by the Government.

In this regard, over the next six years, we expect there will be rapid changes in how our city takes responsibility for our waste, as the Government is preparing a new national waste strategy that will promote and support its vision for a low-waste, more circular economy in Aotearoa New Zealand. There are three fundamental principles at the heart of a Circular Economy:

1. Design out waste and pollution - View waste as a design flaw. Loss of materials and energy through the production process is minimised.
2. Keep products and materials in use - Think in systems. Products are designed to be reused, repaired, and recycled, and waste materials for one process become an input for another.
3. Regenerate natural systems - Shift perspectives from minimising environmental harm to doing good. Valuable nutrients are returned to the soil and ecosystems are enhanced.



Transitioning from a Linear Economy to a Circular Economy (source: Ministry for the Environment)

At TCC, we want to not only support this work but take the lead. We support the view that reducing waste is about making the most of the resources we have, using them for their highest and best value. This means that we need to redefine waste to ensure all resources, materials, and products, can be used again. This is supported by rethinking how we divert waste so that we are constantly moving up the waste hierarchy. For

example, while composting food waste is a better outcome than disposing of it to landfill. Redistributing and reusing food waste to a food rescue organisation is a better use of those resources. However, reducing the purchase of it in the first instance, through education and behaviour change, is the preferred solution.

We also recognise that the circular economy can help to deliver on broader environmental, economic, and job creation objectives alongside meeting a wide range of the Sustainable Development Goals (SDGs), particularly SDG12 – Responsible Consumption and Production. Therefore, the integration of the circular economy into wider TCC policy is underway so that we can support and accelerate the transition across all TCC operations.

The following information sets out how we, together as a community, will promote effective and efficient waste management and minimisation within our city over the next six years.

3 Vision, goals, objectives, and targets

Working together, TCC and the community can achieve more effective and efficient waste management and minimisation in our City, and across the region. To do this, we need leadership from both within TCC and our community that will promote equitable solutions across the full spectrum of our community.

The proposed vision, goals, objectives, and targets are supported by a detailed Action Plan that includes both short-term and long-term actions. The Action Plan is a 'living document' that will be reviewed and updated annually. This ensures that TCC is agile and able to adapt and respond to any changes in resource recovery nationally and internationally, including but not limited to, legislative and technological.

TCC will monitor, evaluate, and report on progress against our vision, goals, and objectives, and targets on a quarterly basis. Progress will be reported through TCC publications, our website, and the TCC Annual Report. The reporting will include a summary of progress and activities undertaken from the Action Plan and identify where unforeseen or emerging issues need to be addressed. On an annual basis, TCC will update, if necessary, the "living" Action Plan to address any of the identified issues. Any new actions will be aligned with our vision, goals, and objectives.

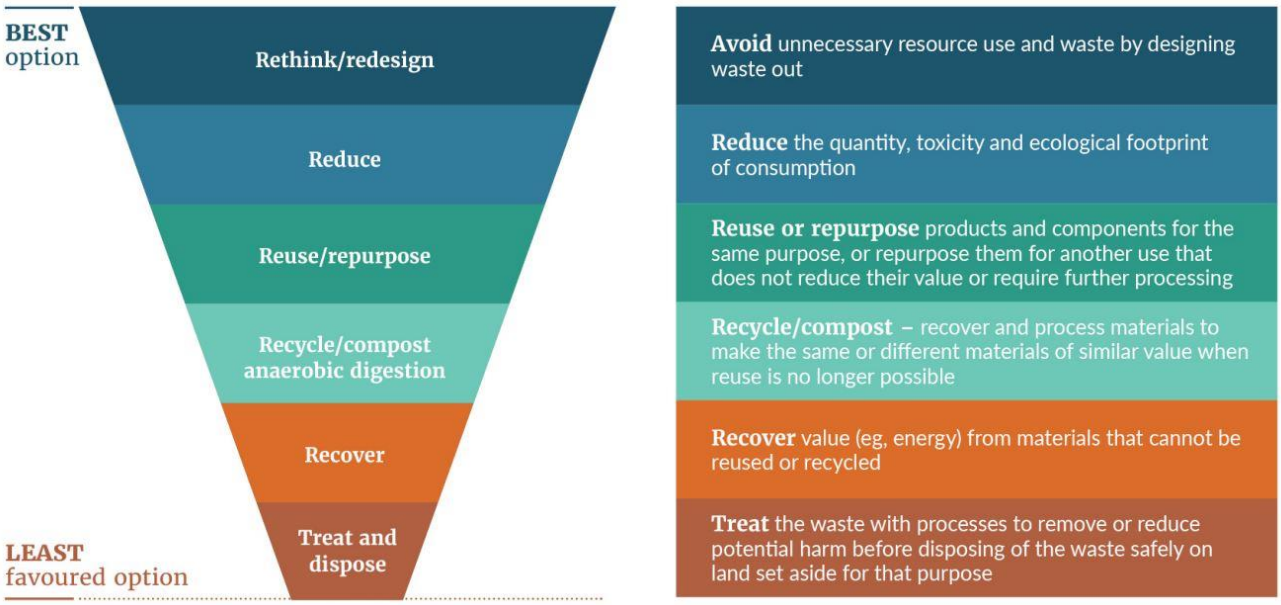
TCC will also provide progress reports of expenditure of its waste disposal levy funds to the Ministry for the Environment, alongside the waste diversion rates achieved as a result of this funding.

3.1 Vision for the future

The vision for the 2022-2028 WMMP is to "**reduce waste to landfill**".

In our view, it achieves a number of outcomes including promoting the waste hierarchy, maximising the diversion of waste, and a transition to a circular economy. It is also measurable.

While we considered the option of an ambitious "zero waste" vision, it was decided that in the six year lifetime of this WMMP it was unachievable. However, as part of the broader TCC Strategic Framework Refresh project , TCC is currently proposing a purposely long-term and aspirational vision of a zero waste city. This reflects feedback from the Strategic Framework Refresh workshops that requested that Council is "more absolute about defining success in measurable terms".



The Waste Hierarchy (source: Ministry for the Environment)

3.2 Goals, objectives, and targets

3.2.1 Goals and objectives

Our proposed goals and objectives to meet our vision are set out in Table 1. The order in which they are presented is not a reflection of their importance:

Table 1: WMMP Goals and Objectives

Goals	Objectives
Goal 1: Resources are valued	Objective 1: Promote a shift up the waste hierarchy to focus on avoiding and reducing resource use that generates waste, before reusing, recycling, and recovering. Objective 2: Reduce the total quantity of waste disposed to landfill. Objective 3: Measure and report progress against targets.
Goal 2: Facilitate effective and efficient waste management and reduction	Objective 4: Provide everyone in the community with an opportunity to access waste services and infrastructure in a way that is equitable. Objective 5: Reduce contamination within kerbside recycling and organic collections, and in public place recycling bins. Objective 6:

	Collaborate with local iwi, central government, other councils, businesses, the community, and private waste companies on waste management and reduction initiatives. Objective 7: Investigate, consider, trial, and implement new technologies and service methodologies for efficient waste reduction.
Goal 3: Promote sustainable waste management	Objective 8: Be led by tikanga and mātauranga Māori to adopt a holistic approach in taking responsibility for our waste. Objective 9: Influence and empower the community to take responsibility for their waste. Objective 10: Reduce greenhouse gas emissions associated with waste. Objective 11: Reduce the harmful environmental, societal, and economic impacts of waste.

3.3 Proposed Targets

Despite undertaking a number of actions from the 2016, including the successful rollout of the household kerbside service, we know that more work is required.

The Waste Assessment has identified that there continues to be a high volume of waste that could be diverted from landfill across a variety of waste streams. We also recognise that if we do not take the lead in the waste space, then we will be left behind by the work already underway within our community and by changes proposed by the Government. Those changes from the Government in relation to the National Waste Strategy and Emissions Reduction Plan are likely to dramatically change how waste is managed in Aotearoa New Zealand. Furthermore, the Government is investing significantly in the waste industry. These initiatives, and the general ambitions of members of our community and the wider waste industry, will drive change.

Therefore, while we have set ambitious targets, we do still believe they are achievable and will result in excellent environmental, social, and cultural outcomes. These will also allow us to lead, rather than follow. It will also enable us to manage costs over a longer period while change is embedded, rather than playing catch up once that change is already in place.

Waste reduction and management targets within the WMMP provide a clear and measurable way to determine how well TCC is achieving its goals. There are a number of waste targets that already exist, which TCC is striving to meet. These are specified in existing TCC waste contracts and the Long Term Plan 2021-2031 (LTP). However, in some instances, and as previously highlighted, reliable data and reporting is an issue in the waste industry due to assumptions and the number of services and facilities.

This means that the targets and key performance indicators from the LTP have not been adopted verbatim as the data utilised to set those focused on volumes of waste and the population across both Tauranga and the Western Bay of Plenty District. For completeness, that target is to reduce the average amount of waste sent to landfill per capita/annum to 450kg by 2024/2025. TCC will review its key performance indicators

during the development of the 2024-2034 Long Term Plan. At this time, TCC will endeavour to align the WMMP and LTP targets based on new data and monitoring gathered over the next three years.

MfE have also set targets to the year 2030 for the whole of Aotearoa New Zealand within the proposed National Waste Strategy. Given the foregoing, we have aligned the proposed targets with the targets put forward by the Government in the proposed National Waste Strategy, in which MfE have set targets for the whole of Aotearoa New Zealand. Along with aligning them with existing ones, where possible.

The proposed targets are based on a TCC financial year, being from 1 July to 30 June, and will be for a total period of six years from 1 July 2022 to 30 June 2028.

3.3.1 Proposed Targets associated with the kerbside collection services

Target 1: Reduce waste to landfill from Kerbside Collection Service

The kerbside collection services introduced in July 2021 adopted targets to reduce household kerbside waste to landfill to 150kg/capita/annum in 2023. MfE has also introduced a target, as set out in the Waste Strategy and WMA review consultation document[4] to reduce household waste disposal by 60 – 70% by 2030. Based on the existing baseline of 200kg/capita/annum for kerbside waste only, this would be the equivalent of reducing the household waste disposed to landfill to between 80kg and 60kg/capita/annum, respectively.

As one of the worst performing Councils in Aotearoa New Zealand, in terms of waste being sent to landfill, TCC proposes to adopt an aspirational target that would better the proposed MfE targets. The proposed TCC targets of household waste to landfill are set out in Table 2. The targets reflect that initial reductions may be easier to achieve than in later years.

Table 2: Household Kerbside Waste to Landfill Targets

Year	Household kerbside waste volumes disposed to landfill per annum
2022/2023	Reduce household kerbside waste disposed to landfill to 175kg/capita
2023/2024	Reduce household kerbside waste disposed to landfill to 150kg/capita
2024/2025	Reduce household kerbside waste disposed to landfill to 130kg/capita
2025/2026	Reduce household kerbside waste disposed to landfill to 110kg/capita
2026/2027	Reduce household kerbside waste disposed to landfill to 90kg/capita
2027/2028	Reduce household kerbside waste disposed to landfill to 75kg/capita (a reduction of 62.5% from the 2021 baseline of 200kg/capita)

Target 2: Reduce organic food waste from kerbside collection service

As identified in the SWAP surveys, approximately 33% of all household kerbside waste going to landfill is organic food waste. Based on the existing baseline of 200kg/capita/annum of waste disposed to landfill, it is calculated that this is approximately 66kg/capita/annum of food waste being disposed to landfill.

This presents a significant opportunity to divert this waste stream that, in turn, would also reduce the emissions of methane to the environment as this material breaks down in landfills.

[4] Ministry for the Environment. 2021. *Te kawe i te haepapa para | Taking responsibility for our waste: Proposals for a new waste strategy; Issues and options for new waste legislation*. Wellington: Ministry for the Environment.

The new kerbside collection services introduced in July 2021 adopted targets to recover a minimum of 12,000 tonnes of food waste, in total, by 2024 across Tauranga. This is the equivalent of 4000 tonnes per annum. Based on the amount of food waste collected between July and November 2021, we are expected to exceed 4,000 tonnes in the first year. Therefore, we are proposing targets beyond those already adopted as part of our kerbside rollout.

Of relevance to food waste, MfE has also introduced a target to reduce organic waste going to landfill for the whole of Aotearoa New Zealand, as specified in the Waste Strategy and WMA review consultation document[5]. But this is set as a reduction in biogenic waste methane emissions by at least 30%, rather than a volume of organic waste material and is not specific to food waste. Our targets for food waste recovery would contribute to this reduction in biogenic waste methane emissions.

TCC proposes to adopt an aspirational target to recover the following volumes of food waste recovered in the household kerbside service. The targets reflect that recovery will take a few years to establish as the kerbside service is more widely adopted by the community, before increasing in subsequent years, until there is a diminishing return.

Table 3: Volumes of food waste recovered in the household kerbside service targets

Year	Household food waste volumes recovered via the kerbside service per annum
2022/2023	Recover 4,200 tonnes of food waste per annum (based on recovering approximately 27kg/capita of food waste from a population of 155,925 people)[6]
2023/2024	Recover 5,000 tonnes of food waste per annum (based on recovering approximately 32kg/capita of food waste from a population of 157,675 people)
2024/2025	Recover 5,750 tonnes of food waste per annum (based on recovering approximately 36kg/capita of food waste from a population of 159,049 people)
2025/2026	Recover 6,500 tonnes of food waste per annum (based on recovering approximately 41kg/capita of food waste from a population of 160,194 people)
2026/2027	Recover 7,250 tonnes of food waste per annum (based on recovering approximately 45kg/capita of food waste from a population of 162,484 people)
2027/2028	Recover 7,500 tonnes of food waste per annum (based on recovering approximately 48kg/capita of food waste from a projected population of 165,411 people)

Target 3: Improve household kerbside diversion rate

While the introduction of the rates-funded household kerbside recycling, food waste, and garden waste bins has reduced the potentially recyclable and recoverable waste in the rubbish bins from 65% to approximately 48%, there still remains a high proportion of waste that could be diverted from landfill[7].

Of the 48% of waste in the household kerbside rubbish bins, 12.4% could be recycled. This was made up of 6.1% paper, 2.3% plastics, 0.9% steel cans, 0.6% aluminium cans, and 2.5% of glass bottles and jars. An

[5] Ministry for the Environment. 2021. *Te kawe i te haepapa para | Taking responsibility for our waste: Proposals for a new waste strategy; Issues and options for new waste legislation*. Wellington: Ministry for the Environment.
[6] Population projection figures from 'Tauranga City Population and Dwelling Projection Review 2021 (Growth Allocations 2018-2118).
[7] Tauranga City Council SWAP Survey, undertaken by Waste Not Consulting, December 2021.

additional 35.3% of compostable material could be diverted, consisting of 25.9% of organic kitchen waste and 9.5% of garden waste.

TCC proposes to adopt targets to divert these potentially recoverable and recyclable materials from the household rubbish bins. The targets reflect that education and participation (including using the garden waste and food waste bins) will take a few years to establish as the kerbside service is more widely adopted by the community. There is also always likely to be some contamination due to the city being a tourist destination where visitors are unaware of the correct processes.

Table 4: Reduce the recyclable and recoverable waste in the rubbish bins

Year	Household kerbside diversion rate per annum
2022/2023	Reduce the recyclable and recoverable waste in the rubbish bins from 48% to 40%
2023/2024	Reduce the recyclable and recoverable waste in the rubbish bins from 40% to 30%
2024/2025	Reduce the recyclable and recoverable waste in the rubbish bins from 30% to 20%
2025/2026	Reduce the recyclable and recoverable waste in the rubbish bins from 20% to 10%
2026/2027	Maintain the recyclable and recoverable waste in the rubbish bins to no more than 10%
2027/2028	Maintain the recyclable and recoverable waste in the rubbish bins to no more than 10%

3.3.2 Proposed Targets associated with the Te Maunga Resource Recovery Park

As summarised in section 3.2.1 of the Waste Assessment, TCC is proposing to upgrade the Te Maunga Transfer Station to take the form of a 'Resource Recovery Park'. The upgrade will support the population growth in the area and provide residents and industry with numerous options to recover multiple waste streams from landfill, such as untreated timber, organics, concrete, tyres, e-waste, hazardous waste, construction, and demolition waste. The Te Maunga Resource Recovery Park will also contain a recycling centre, community recovery centre and workshop.

TCC is also proposing to upgrade the Material Recovery Facility ('MRF') with a new optical sorter to reduce contamination within its recyclable waste streams.

The contract with EnviroWaste to operate the upgraded facilities includes a targeted reduction in solid waste to landfill from the Te Maunga Resource Recovery Park. This is proposed to be adopted in the 2022 WMMP as below.

Target 4: Reduce waste to landfill from Te Maunga Resource Recovery Park

As the Te Maunga Resource Recovery Park will include upgraded facilities for recycling, a dedicated construction and demolition recovery facility, and a community-led recovery centre, TCC requires that there will be improved diversion of waste from landfill.

TCC proposes to adopt an aspirational target to reduce waste to landfill from the Te Maunga Resource Recovery Park. The targets reflect that diversion may take a couple of years to establish while the facility is fully developed and until the community utilises the activities at the site. It is noted that the Key Performance Indicator contract targets with EnviroWaste were only set for three years in 2022/2023,

2023/2024, and 2024/25, as listed below. Positively, these targets are likely to be exceeded in the first year, due to facility upgrades and the kerbside service rollout.

- 10-20% reduction in 2022/23
- Further 10-20% reduction in 2023/24
- Further 4-5% reduction in in 2024/25
- The targets below are based on the baseline of total volumes of waste being sent to landfill from the Te Maunga Resource Recovery Park, which was approximately 57,500 tonnes in 2020/2021. The targets are also year on year (i.e. the 2023/2024 target is a reduction of 20% of the 2022/2023 volume of waste sent to landfill).

Table 5: Volume of Waste sent to Landfill from the Te Maunga Resource Recovery Park Targets

Year	Reduction of Waste sent to Landfill from the Te Maunga Resource Recovery Park
2022/2023	Reduce waste sent to landfill by 20% per annum (from 57,500 tonnes to between 46,000 tonnes)
2023/2024	Reduce waste sent to landfill by 20% per annum (from 46,000 tonnes to between 36,800 tonnes)
2024/2025	Reduce waste sent to landfill by 5% per annum (from 36,800 tonnes to 34,960 tonnes)
2025/2026	Reduce waste sent to landfill by 5% per annum (from 34,960 tonnes to 33,212 tonnes)
2026/2027	Reduce waste sent to landfill by 5% per annum (from 33,212 tonnes to 31,551 tonnes)
2027/2028	Reduce waste sent to landfill by 5% per annum (from 31,551 tonnes to 29,974 tonnes)

Target 5: Improve recycling of Construction and Demolition waste

As construction and demolition waste is the largest source of waste to Class 1 landfills at 33%[8], this presents a significant opportunity to divert these materials from landfills.

The Te Maunga Resource Recovery Park will include a dedicated construction and demolition recovery facility that will improve the sorting and recycling of construction and demolition waste. As summarised from the SWAP Survey, approximately 500 tonnes per week of construction and demolition waste is sent to landfill from the TCC Transfer Stations. This is the equivalent of 26,000 tonnes per annum. TCC is also aware that approximately 50,000 tonnes of waste was being disposed annually at the Jack Shaw Cleanfill prior to its closure in July 2020.

TCC proposes to adopt an aspirational target to recycle the following volumes of construction and demolition waste sorted at the Te Maunga Resource Recovery Park. The targets reflect that recovery will take a few years to establish as the processing of waste at the new facility is more widely adopted by the construction and demolition, and as the waste disposal levy increases, which will further encourage recycling rather than disposal at landfills. It is noted that the contract targets with EnviroWaste were only set for three years in 2022/2023, 2023/2024, and 2024/25 and these targets are adopted in the table below.

Table 6: Construction and Demolition Waste Recycled at the Te Maunga Resource Recovery Park Targets

[8] Ministry for the Environment, Estimates of waste generated in Aotearoa New Zealand, 9 September 2021.

Year	Volume of Construction and Demolition Waste Recycled at the Te Maunga Resource Recovery Park per annum
2022/2023	Recover 10,000 tonnes of construction and demolition waste per annum (based on manual sorting and recovery)
2023/2024	Recover 12,500 tonnes of construction and demolition waste per annum (based on manual sorting and recovery)
2024/2025	Recover 30,000 tonnes of construction and demolition waste per annum (based on new construction and demolition plant being commissioned)
2025/2026	Recover 35,000 tonnes of construction and demolition waste per annum
2026/2027	Recover 42,000 tonnes of construction and demolition waste per annum
2027/2028	Recover 50,000 tonnes of construction and demolition waste per annum

3.3.3 Proposed Targets associated with Biosolids

Target 6: Diversion of Biosolids from Landfill Targets

Following the successful vermicomposting trial to divert biosolids from landfill, TCC proposes to adopt aspirational targets to increase the diversion rate of biosolids to 100%. The targets reflect that this change will take a couple of years to establish as research is undertaken, end markets established, and any facility upgrades and/or resource consents obtained.

Importantly, there are numerous opportunities for TCC to divert biosolids from landfill. These include, but are not limited to, fertiliser and soil conditioner for agricultural and forestry land, landfill capping, quarry rehabilitation, and energy / electricity generation. As such, the diversion target may not be solely achieved by sending the biosolids to a vermicomposting facility.

Table 7: Diversion of Biosolids from Landfill Targets

Year	Diversion of Biosolids from Landfill per annum
2022/2023	Divert 50% of biosolids from landfill per annum
2023/2024	Divert 75% of biosolids from landfill per annum
2024/2025	Divert 100% of biosolids from landfill per annum
2025/2026	Maintain diversion of 100% of biosolids from landfill per annum
2026/2027	Maintain diversion of 100% of biosolids from landfill per annum
2027/2028	Maintain diversion of 100% of biosolids from landfill per annum

4 The waste situation

The following section summarises the information presented in the Waste Assessment and includes:

- TCC provided waste services and facilities
- Non-council provided services and facilities
- Waste quantities, source, and composition
- Identified waste issues
- Forecast of future demand for waste services and facilities

4.1 TCC provided Waste Services and Activities

- On the 1st July 2021, TCC introduced a household kerbside collection service that is funded using a targeted rate of $210.00 per household. In the first year, the new kerbside service comprises of:
  - a fortnightly kerbside rubbish collection (140L rubbish bin)
  - a fortnightly kerbside recycling collection (45L glass crate + 240L recycling bin)
  - a weekly kerbside food scraps collection (23L food scraps bin)
  - Optional fortnightly or 4-weekly garden waste collection service (240L bin)
- Waste education and minimisation programmes to various sectors of our community, schools, businesses, and households. TCC also provides funding for community-led and private waste

programmes, as well as an annual contestable community fund of $75,000.

- Bylaws to protect the public from nuisance, to protect, promote and maintain public health and safety, and to minimise the potential for offensive behaviour in public places.
- Litter control and enforcement, including managing the installation, maintenance and emptying of public litter bins, and dealing with illegal dumping and abandoned vehicles throughout the City.
- City-wide cleaning including street sweeping, footpath cleaning, and sump clearing.

4.2 TCC provided Waste Facilities

- TCC own land and buildings associated with two solid waste transfer station sites at Te Maunga (Truman Lane, Mount Maunganui) and Maleme Street (Greerton) that provide waste consolidation, processing, and disposal services. The land and buildings are leased to EnviroWaste who manage the operations on these two sites.
    - Te Maunga Transfer Station is proposed to be upgraded to take the form of a 'Resource Recovery Park'. The upgrade will support the population growth in the area and provide residents and industry with numerous options to recover multiple waste streams from landfill, such as untreated timber, organics, concrete, tyres, e-waste, hazardous waste, construction and demolition waste. The Te Maunga Resource Recovery Park will also contain a comprehensive public drop-off recycling centre, community recovery centre and workshop.
    - Maleme Street Transfer Station is also proposed to be upgraded to ensure good management from both an operational and Health and Safety perspective. However, this facility was closed to the public on 2nd August 2021 after a review identified that options to reduce contamination from flooding and stormwater were uncertain and therefore not seen as financially viable when compared with the opportunity to invest in extensive waste diversion at Te Maunga. Maleme Street Transfer Station will remain open for municipal consolidated waste (transported in front-end loaders or rear entry compactors) and construction and demolition waste only, to commercial account holders.
- TCC operates a Class 2 landfill at the southern end of the Tauranga Airport. The site currently accepts construction and demolition waste, namely concrete, asphalt, soil, and sand, with the material being used to raise the ground surface and increase the capping depths on an underlying closed landfill.
- There are no open Class 1 landfill disposal facilities[9] located in Tauranga. However, TCC own two additional closed Class 1 landfills at Te Maunga and Cambridge Road Park, in addition to the closed landfill at the airport. These are actively managed and monitored in accordance with resource consent conditions. A Class 1 landfill, known as the Ross Green Landfill, is located on McPhail Road in the Western Bay of Plenty District. It is understood that this site accepts a range of waste streams, but primarily consisting of contaminated materials and soils, construction and demolition waste, and other cleanfill. The site is not consented to accept general household waste.
- TCC lease land at Te Maunga to Waste Management Limited, who operate the Materials Recovery Facility (MRF) to sort paper and cardboard, plastics, tin and aluminium cans. Waste Management's lease agreement to operate the MRF on TCC owned land expires in 2026. The MRF is proposed to be

[9] A Class 1 landfill is a site that accepts municipal solid waste and generally also accepts C&D waste, some industrial wastes and contaminated soils. Class 1 landfills often use managed fill and clean fill materials they accept, as daily cover. As defined in the *Technical Guidelines for Disposal to Land Waste Management Institute New Zealand (WasteMINZ), August 2018*.

upgrade with a new optical sorter to reduce contamination within its recyclable waste streams.

- TCC lease land at Te Maunga to Revital Group, who process garden waste into compost by way of windrow composting. Revital Group's lease agreement with TCC expired in February 2020, with Envirowaste picking up the lease in July 2021. Envirowaste currently sub-lease the composting facility to Revital.
- TCC lease land at Te Maunga to Goodwood Limited, who process untreated timber into wood chip by way of shredding. Their reprocessed products are garden mulch, motorway roadside mulch, animal bedding and woodchip for playgrounds. Goodwood have been operating at Te Maunga for approximately two years. Goodwood's lease agreement with TCC expired in February 2020, with Envirowaste picking up the lease in July 2021. Envirowaste currently sub-lease the wood waste recovery facility to Goodwood.
- Wastewater from households in Tauranga City is sent to TCC's two wastewater treatment plants located at Chapel Street and Te Maunga. Processing of the wastewater results in a by-product commonly referred to as 'biosolids'. Approximately 50% of the biosolids are currently diverted to a private sector vermicomposting facility in Kawerau. With the remaining volume being disposed to landfill.

4.3 Non-council provided Waste Services and Facilities

Private waste services in Tauranga are usually funded through user charges and include:

- Household and commercial rubbish collections
- Household and commercial mixed recycling collections (excluding glass and plastics 3-7)
- Household and commercial garden waste collections
- Hazardous waste services, including agricultural hazardous waste

While there have historically been private sector landfill and cleanfill operations occurring within Tauranga, there are currently none operating within its City boundaries. TCC is aware of cleanfill operations in the wider Bay of Plenty region that some waste is sent directly to.

We are also aware that there are a significant number of community-led resource recovery facilities throughout Tauranga. This includes charity shops and organisations that collect waste streams to reuse, repurpose or upcycle into other products, such as Precious Plastics and the ReMaker Space. In addition, TCC supports food rescue organisations like Good Neighbour and the Tauranga Food Bank. All of these activities contribute substantially to the diversion of organic waste to landfill, while having a host of other environmental, social, and economic benefits.

4.4 Public health protection

TCC consulted with the Medical Officer of Health during the preparation of our draft Waste Assessment. Their response is included in full in section 10 of the Waste Assessment.

As advised by the Medical Officer of Health, waste management is important for the health of the public. If not disposed of properly, waste can present a health hazard through physical injury, chemical poisoning, exposure to infectious material and encouraging pests such as vermin, flies, and mosquitoes. Waste can also block stormwater systems, contaminate land and water, and create odours.

While the Medical Officer of Health supports the vision and overall strategic direction proposed, they raised several matters for TCC to address that would ensure that public health would be protected. We have included specific actions in Part B, Section 1, of this WMMP and provided clarification within the final version of the Waste Assessment to address their concerns.

Based on this, we consider that we have achieved the outcomes sought by the Medical Officer of Health that to ensure public is protected, TCC provides and supports waste services and infrastructure in ways that do not increase the risk to health, are affordable, and are accessible to everyone no matter where they live in the city.

4.5 Summary of the volume of waste and diverted materials

The following section summarises the volume of waste and diverted materials processed at TCC facilities, as detailed in the Waste Assessment attached in Appendix 1.

The known total volume of waste to landfill that was discarded and processed through TCC facilities has steadily increased over the six years from 122,716 tonnes in 2015/16 to 144,495 tonnes in 2020/21[10]. This is the equivalent of each person disposing of an additional 44 kilograms of waste per year, for a total of 980 kilograms per capita, every single year. An increase of 18%, which outpaces the population increase of just 12% over the same period.

When looking at the volumes of waste collected via private household kerbside collection services for general waste, prior to the TCC rates funded service being rolled out in July 2021, waste to landfill volumes have remained relatively steady at approximately 200kg per capita.

In relation to diverted material, the total volume of recycled material diverted from landfill at the Transfer Stations and via private household services was previously decreasing, from 9,275 tonnes in 2015/16 to 8,512 tonnes in 2017/18. Before an increase that can be attributed to TCC introducing a rates-funded kerbside glass collection in October 2018. This pushed the total volume to 12,790 tonnes in 2020/21. The split between private household kerbside recycling collections and individuals dropping recycling to the Transfer Station has been relatively even, with approximately 55% - 60% previously collected via private kerbside services.

Garden waste volumes have remained largely the same over the last five years, only increasing from 6,015 tonnes in 2015/16 to 6,237 tonnes in 2020/21. This is the equivalent of 42 kilograms per capita in 2020/21.

[10] The data includes residual waste collected by private household kerbside services, as well as general domestic and commercial waste disposed at both Te Maunga and Maleme Street transfer stations that was not diverted from landfill.

Of which, 15 kilograms was collected via private kerbside services.

As recorded in the Waste Assessment, it is important to note that this data does not accurately record the complete picture of waste in Tauranga and the wider Bay of Plenty Region. This is because there are multiple waste streams that are diverted prior to reaching TCC facilities. For example, for cleanfill, we understand that this could be the equivalent of another 60,000 tonnes of waste per annum that is processed at facilities not operated by TCC. Which is up to an additional 407 kilograms per person. In addition, there is an unknown volume of waste that is sent directly to landfills, cleanfills, and farm dumps that are not controlled by TCC. This additional volume of waste could be significant.

Overall, these figures reflect that per capita, we're both generating and disposing of more waste to landfill than ever. As a City, Tauranga is also significantly higher than the national average for waste to landfill.

In addition to general waste, TCC also manages the disposal of biosolids. Historically, biosolids from the Chapel Street and Te Maunga wastewater treatment plants were disposed of to landfill. In October 2019, TCC began a trial at the Te Maunga wastewater treatment plant to divert biosolids to a private vermicomposting facility in Kawerau. In the first nine months of the vermicomposting trial (2019/20), 12% of all biosolids or 13kg per capita of biosolids, was successfully diverted from landfill. In 2020/21, 66% of all biosolids were able to be diverted to the vermicomposting trial, which increased the volume to 66kg per capita per annum.

4.5.1 Summary of the activity source of waste to landfill

The following section summarises the activity source of waste passing through both TCC Transfer Stations that is subsequently disposed of at a Class 1 landfill, as detailed in the Waste Assessment attached in Appendix 1.

Table 8 summarises the percentage of loads and total weight, as well as the tonnes per week, from the results of SWAP audits in October / November 2020.

These figures do not include any waste that is sent directly to landfill or cleanfill sites that does not pass through either of the TCC Transfer Stations. However, due to these TCC Transfer Stations being open to the public and private contractors that operate from outside the City itself, it is recognised that the total volumes of waste processed through these facilities includes a portion of waste generated outside of Tauranga.

Table 8 - Activity source of all waste from Transfer Stations to Landfill - Oct/Nov 2020

Activity sources of all waste loads at Maleme St and Te Maunga Transfer Stations - Oct/Nov 2020	% of loads surveyed	% of total weight	Tonnes/week
Construction & demolition waste from a building	24%	23%	508 T/week
Industrial / commercial / institutional sources	21%	30%	658 T/week
Landscaping and earthworks – waste from landscaping activity, garden maintenance, and site works, both domestic and commercial	9%	5%	115 T/week
Residential – all waste originating from	35%	8%	169 T/week

residential premises other than that covered by one of the other, more specific classifications (includes drop-offs of bagged domestic waste)			
Subtotal - general waste	89%	66%	1,451 T/week
Kerbside rubbish – waste collected from residential and commercial premises by private and Council kerbside rubbish collections	11%	34%	751 T/week
TOTAL	**100%**	**100%**	**2,202 T/week**

Table 9 and Figure 1 compares the data collected during SWAP Surveys between four periods, beginning in 2016/2017 to October 2020. When comparing those figures to previous years, it demonstrates that there has been an increase of 22% of total waste being sent to landfill, from 1804 tonnes per week in 2016 to 2202 tonnes per week in 2020.

We understand that the increase, of 14%, in the total tonnage of waste to landfill between Feb/March 2020 and Oct/Nov 2020 can be attributed, in part, with the closure of the Jack Shaw cleanfill site between the two audit periods.

Table 9: Maleme St and Te Maunga Transfer Station combined

Activity sources of all waste loads at Maleme St and Te Maunga Transfer Stations	2016/2017 - 4 surveys combined	October 2018	Feb/Mar 2020	Oct/Nov 2020
Construction & demolition	416 T/week	472 T/week	349 T/week	508 T/week
Industrial/commercial/institutional	607 T/week	551 T/week	612 T/week	658 T/week
Landscaping & earthworks	58 T/week	69 T/week	80 T/week	115 T/week
Household	116 T/week	116 T/week	159 T/week	169 T/week
Subtotal - general waste at Transfer Station	**1,197 T/week**	**1,209 T/week**	**1,201 T/week**	**1,451 T/week**
Kerbside rubbish	607 T/week	693 T/week	738 T/week	751 T/week
Total Volume of Waste Sent to Landfill	**1,804 T/week**	**1,902 T/week**	**1,939 T/week**	**2,202 T/week**

4.5.2 Transfer Station Waste Composition

Figure 1 and Table 10 provide a summary of the waste streams (composition) that was sent to landfill from both TCC Transfer Stations in October and November 2020. The data includes general waste excluding kerbside rubbish (both Council and private), and overall waste to landfill, which includes kerbside rubbish. This separation of data provides a comparison of the impact of kerbside waste services.

When excluding kerbside waste, it is clear that timber was the largest component of general waste (28.2% or 409 tonnes/week), while organics is only 12.8% or 186 tonnes/week. However, when including kerbside

waste, organics becomes the largest component at 26.8% or 589 tonnes, while timber is 19.2% or 329 tonnes/week. This presents opportunities to target specific waste streams and sources such as organic material generated by households, and construction and demolition waste generated by commercial businesses.

This data provides us with information that we can utilise to target specific waste streams within the action plan of the WMMP.

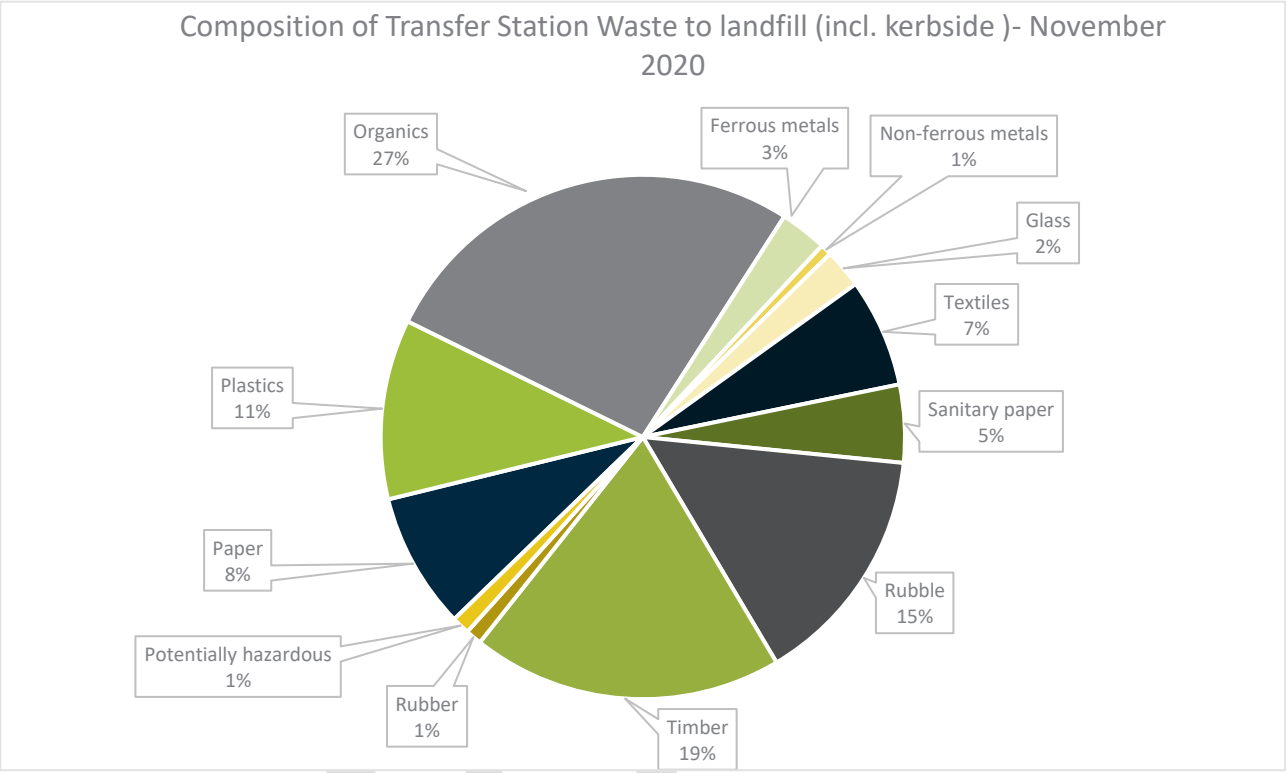


Figure 1: Composition of TCC Transfer Station waste to landfill including kerbside waste (SWAP Nov 2020)

Table 10: Composition of all waste sent to landfill via TCC Transfer Stations – SWAP November 2020

All waste to landfill from TCC Transfer Stations - Oct/Nov 2020		General waste (excludes kerbside rubbish)		Overall waste (includes kerbside rubbish)	
		% of total	Tonnes per week	% of total	Tonnes per week
Paper	Recyclable	2.1%	31 T/week	3.8%	83 T/week
	Cardboard	4.4%	64 T/week	3.2%	70 T/week
	Non-recyclable	1.4%	21 T/week	1.4%	32 T/week
	Subtotal	**8.0%**	**116 T/week**	**8.4%**	**185 T/week**
Plastics	Recyclable	0.4%	6 T/week	1.0%	23 T/week
	Non-recyclable	11.1%	161 T/week	10.1%	223 T/week

	Subtotal	**11.5%**	**167 T/week**	**11.1%**	**245 T/week**
Organics	Kitchen waste	4.5%	65 T/week	14.4%	316 T/week
	Compostable greenwaste	4.4%	64 T/week	8.4%	185 T/week
	Non-compostable greenwaste	2.6%	37 T/week	2.3%	51 T/week
	Organics other	1.3%	19 T/week	1.7%	38 T/week
	Subtotal	**12.8%**	**186 T/week**	**26.8%**	**589 T/week**
Ferrous	Primarily ferrous	1.5%	22 T/week	1.3%	29 T/week
metals	Steel other	1.9%	28 T/week	1.6%	34 T/week
	Subtotal	**3.4%**	**50 T/week**	**2.9%**	**63 T/week**
Non-ferrous metals		0.6%	8 T/week	0.7%	16 T/week
Glass	Recyclable	0.8%	11 T/week	1.5%	33 T/week
	Glass other	1.2%	18 T/week	1.0%	21 T/week
	Subtotal	**2.0%**	**29 T/week**	**2.4%**	**54 T/week**
Textiles	Clothing/textiles	2.2%	32 T/week	2.1%	45 T/week
	Multi-material/other	6.3%	92 T/week	4.7%	103 T/week
	Subtotal	**8.5%**	**124 T/week**	**6.7%**	**148 T/week**
Sanitary paper		2.7%	40 T/week	4.8%	105 T/week
Rubble	Cleanfill	4.5%	66 T/week	3.0%	66 T/week
	New plasterboard	4.6%	67 T/week	3.0%	67 T/week
	Other	11.2%	162 T/week	8.9%	196 T/week
	Subtotal	**20.3%**	**295 T/week**	**14.9%**	**329 T/week**
Timber	Reusable	1.6%	23 T/week	1.0%	23 T/week
	Unpainted & untreated	4.9%	71 T/week	3.2%	71 T/week
	Non-recoverable	21.8%	316 T/week	14.9%	329 T/week
	Subtotal	**28.2%**	**409 T/week**	**19.2%**	**422 T/week**
Rubber		1.3%	19 T/week	1.0%	21 T/week

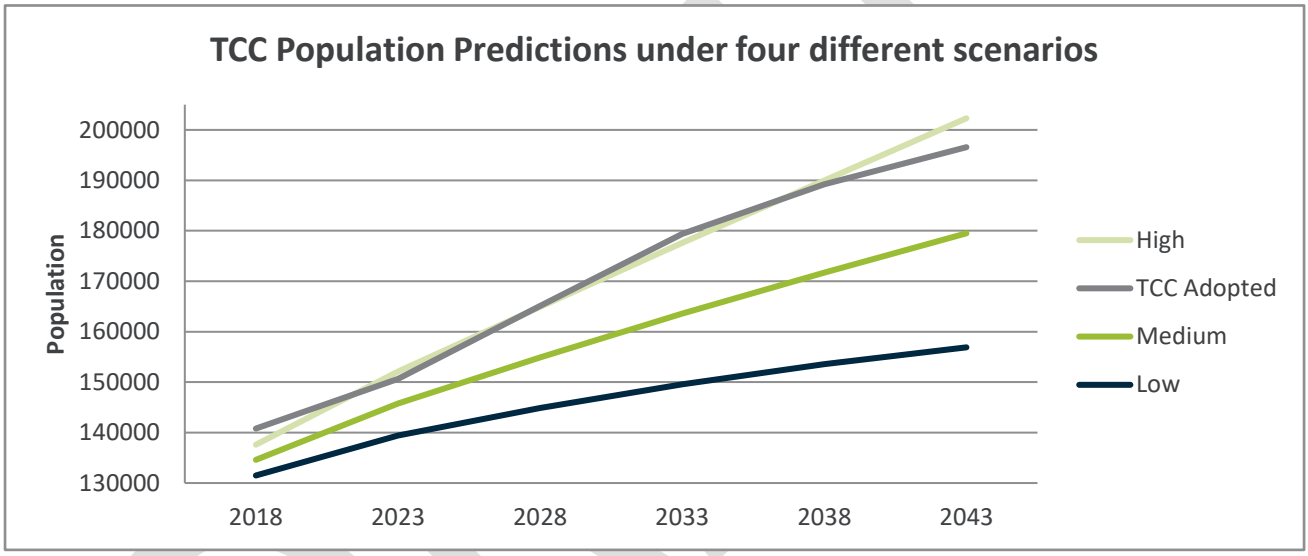
Potentially hazardous		0.7%	9 T/week	1.1%	25 T/week
TOTAL		**100.0%**	**1,451 T/week**	**100.0%**	**2,202 T/week**

4.6 Forecast future demand

Population growth, and to a lesser extent economic growth, is expected to increase and total waste is expected to increase accordingly. Diversion services are required to limit the pressure on the landfill and other waste handling facilities to be able to manage the associated increase in demand for waste services.

Figure 2 compares TCC's adopted growth scenario for the purposes of infrastructure planning with the low, medium, and high growth scenarios from Statistics NZ. TCC is planning for an expected population of 197,000 in 2043.

Figure 2: Projected Population



4.7 Identified city waste issues

The following section summarises the key issues identified and considered in detail within the Waste Assessment that we have sought to address within this WMMP. This follows a review of our progress against the previous WMMP action plan, analysis of data to forecast the future waste demand, and emerging events since the last WMMP was adopted in 2016.

The issues are described for each relevant customer or waste category.

4.7.1 Household

Issue 1: The way we currently consume products leads to large quantities of waste

Our population continues to grow alongside record levels of consumption, which largely focus on a 'take-make-dispose' system. This is due to a lack of investment in waste infrastructure and services, with our ability to recycle and reuse resources limited in many parts of Aotearoa New Zealand. As well as consumer behaviour and mentalities.

This places immense stress on our diminishing resources, generates a significant volume of waste that largely ends up in landfill, and encourages further consumption. A fundamental shift in how we live and do

business, alongside a substantial investment in waste infrastructure, is the only way to change this current model to a more resource-efficient and sustainable system.

Issue 2: There is a high volume of household waste going to landfill that could be diverted

The volume of waste disposed to landfill that is collected from household kerbside services in Tauranga has maintained steady at, or about, 200 kg/capita/year for the last six years. This is despite TCC previously investing in behaviour change and education programmes to reduce, re-use, and recycle waste.

Now that the rates funded household kerbside service has been established in Tauranga, with additional bins for every household to divert more waste from landfill, we expect this volume of waste to landfill to decrease. Especially as previous SWAP audits have identified that nearly 70% of all household kerbside waste could be diverted. Currently, based on the SWAP audit in December 2021, we still have approximately 50% of all household kerbside waste that could still be diverted. So, there is plenty more work to be done. This includes reducing contamination of recycling bins and increasing the number of households using the new kerbside food waste service.

There is also a high volume of household waste that is still disposed directly at the resource recovery parks that could be diverted from landfill. This includes food and garden waste, eWaste, construction and demolition materials, and other waste streams that could be diverted from landfill.

Issue 3: The proportion of our community living in multi-unit dwellings is growing

Approximately 10% of TCC's households live in multi-unit developments and this is expected to grow. Particularly with recent legislative changes being proposed by Government to increase housing supply. Access and storage restrictions at multiple-unit dwellings mean that TCC are unable to offer standard kerbside services to all of these premises, but still want to be able to offer the range of services to these customers as elsewhere in the city.

4.7.2 Businesses and organisations

Issue 4: Businesses and organisations need better services to divert waste from landfill

The SWAP data shows that readily recoverable dry recyclables, construction and demolition waste, organic material and re-usable items are disposed of at both TCC Transfer Stations. An unknown proportion of this waste comes from businesses and organisations. This includes waste from small and medium enterprises, such as, not for profit, community organisations, early childhood centres, and schools. Currently, these enterprises either engage private waste collection services or dispose of their waste directly at the two TCC provided Transfer Stations. There is an opportunity to develop more services for businesses to divert and dispose of their waste either at kerbside or at the Te Maunga resource recovery park.

4.7.3 Construction and demolition waste

Issue 5: There is a high volume of construction and demolition material going to landfill

The SWAP audits have identified that approximately a quarter of all waste to landfill by weight processed through the two Transfer Station was construction and demolition waste. In addition, there is an unknown quantity of construction and demolition waste being sent directly to cleanfill and landfills not operated by TCC. Therefore, TCC does not have accurate records and data of the volume of construction and demolition waste being generated within our city.

There is now an opportunity to engage and educate the construction and demolition industry to ensure they operate as high up the waste hierarchy as possible, but firstly reducing waste generation, before re-using or

recycling waste at the upgraded Te Maunga resource recovery park and other facilities.

4.7.4 Biosolids waste

Issue 6: Disposing of biosolids to landfill affects cultural, environmental, social, and economic values

TCC recognises that in some instances the historical disposal of waste, such as biosolids, has not resulted in good outcomes.

While the recent vermicomposting trials have been successful in diverting up to 100% of biosolids from landfill, this has only been for a short period and TCC are currently awaiting the outcomes of a private resource consent application for a facility that they do not control. There is also a requirement that "backup" options are available for the disposal of biosolids in the event this type of waste cannot be diverted to a vermicomposting facility at any point in time.

Importantly, there are numerous opportunities for TCC to divert biosolids from landfill. These include, but are not limited to, fertiliser and soil conditioner for agricultural and forestry land, landfill capping, quarry rehabilitation, and energy / electricity generation.

4.7.5 All waste

Issue 7: Litter and illegal dumping, which has environmental and financial costs, is increasing

Litter and illegal dumping arise due a number of reasons including, a lack of waste infrastructure and services, costs, behaviour, and accidents. Although each act of littering or illegal dumping is usually, but not always, small in scale, it is a problem that has a huge environmental cost.

Additionally, the budget for monitoring, maintaining, cleaning, and enforcement action undertaken by TCC and other organisations continues to grow. This places additional stress and financial costs on our city's ratepayers.

Issue 8: Cost and volume uncertainty has risen due to legislation change or service interruption

Significant national regulation changes are occurring within this WMMP planning cycle. As previously summarised, MfE are reviewing the National Waste Strategy, WMA, and Litter Act, and are preparing an Emissions Reduction Plan. These changes will have a significant impact upon the activities that are undertaken by Councils throughout Aotearoa New Zealand.

In addition, the existing increases in the Waste Disposal Levy and an increase in price and reduction in availability of NZ Units in the ETS will drive the cost of disposal to landfill upwards. This financial cost, alongside the possible introduction of a container return scheme and other product stewardship schemes, may impact recycling bin composition and the Resource Recovery Park waste streams. In turn, affecting the range and type of services offered by TCC.

The operation of waste infrastructure and services are often reliant on resource consents. As occurred at Maleme Street Transfer Station, when a facility is unable to meet resource consent conditions, or there is a change in legislation (such as the RMA reforms), this could affect waste operations and services.

Issue 9: Unforeseen events can result in high volumes of waste in a short period

Unforeseen events, such as natural and man-made disasters, and pandemics, apply a different pressure upon waste services and other inter-related services by potentially creating a significant volume of waste, which may be contaminated, in a very short timeframe.

In addition, climate change will result in gradual sea level rise that may require the removal of built

structures, including closed landfills, or disrupt waste facilities, that become inundated.

These events can leave adverse legacy effects that can take years to remedy. For example, the earthquakes in Christchurch, the COVID-19 pandemic, and the management of waste following the Rena disaster reemphasise the need for planning. Lessons can be learnt from these events to assist in preparing for future events in Tauranga.

Other issues: Waste movements

We know that waste does not originate and stay in any one district. Rather, the generation, management, and minimisation activities from waste are fluid. It is often generated in one district, then transferred and/or consolidated in another district, before being disposed somewhere else. Waste is also often transferred through districts. For example, the Te Maunga MRF receives recyclable materials from districts as far away as Gisborne. This material is then sorted and processed in Tauranga, before being transported to final destinations in the Waikato and Auckland. With some waste then being sent overseas.

Therefore, sub-regional, regional, cross-regional, and national collaboration is required to manage and minimise waste. This could include, for example, the standardisation of services, joint-partnerships between Territorial Authorities to fund, deliver, and manage waste infrastructure, and the development of waste strategies, policies, and plans.

We see this issue as touching all of the issues raised above and therefore, it is not a standalone issue in itself. Introduction

Other issues: Recognition of Te Tiriti o Waitangi (Te Tiriti) or te ao Māori

The 2016 WMMP did not contain any reference to Te Tiriti o Waitangi or te ao Māori. These are notable gaps in modern environmental legislation for Aotearoa, which has been recognised in the Governments proposed Waste Strategy and Legislation.

While TCC has assisted marae with waste management and minimisation initiatives in the past, TCC have historically had very limited iwi and hapu engagement or Maori perspectives in the development of waste plans, policies, and strategies. We recognise that Aotearoa New Zealand is in a unique position because alignment with the underlying principles of circular economy is already a significant part of te ao Māori. Therefore, we need to take a partnership approach to address the issues identified above. This will ensure that the principles of Te Tiriti o Waitangi are upheld and will enable Māori to shape the activities and actions to meet our proposed waste vision and transition to a circular economy.

5 National and Local Government Policy and Legislation

This section provides a succinct summary of the strategic, legislative and policy framework that influences and drives the demand for waste collection, recycling, recovery, treatment, and disposal services in Tauranga and the rest of Aotearoa New Zealand.

At the time of drafting this WMMP, the Government had commenced a wide-ranging review of its strategic and legislative documents to transform Aotearoa New Zealand's waste outcomes. The proposed changes are set out in the Issues and Options for New Waste Legislation report[11], Waste Reduction Work Programme [12], and plan for the draft Emissions Reduction Plan[13]. Submissions on these proposed changes closed in late-2021 with the new Waste Strategy and Legislation expected to be released in late-2022. In our view, we have aligned the vision, goals, and objectives of this WMMP with both the existing and proposed strategic and legislative direction set by the Government.

The Waste Assessment in Appendix A provides further information on the relevance and direction provided by the legislation.

[11] Ministry for the Environment. October 2021. *Te kawe i te haepapa para | Taking responsibility for our waste: Proposals for a new waste strategy; Issues and options for new waste legislation*. Wellington: Ministry for the Environment.
[12] Ministry for the Environment. *Waste reduction work programme*. Wellington: Ministry for the Environment. Published August 2021.
[13] Ministry for the Environment. 2021. *Te hau mārohi ki anamata | Transitioning to a low-emissions and climate-resilient future: Have your say and shape the emissions reduction plan.* Wellington: Ministry for the Environment

5.1 Existing National Government Policy and Legislation Framework

The existing strategic and legislative framework for managing and minimising waste is summarised in Figure 3 below:

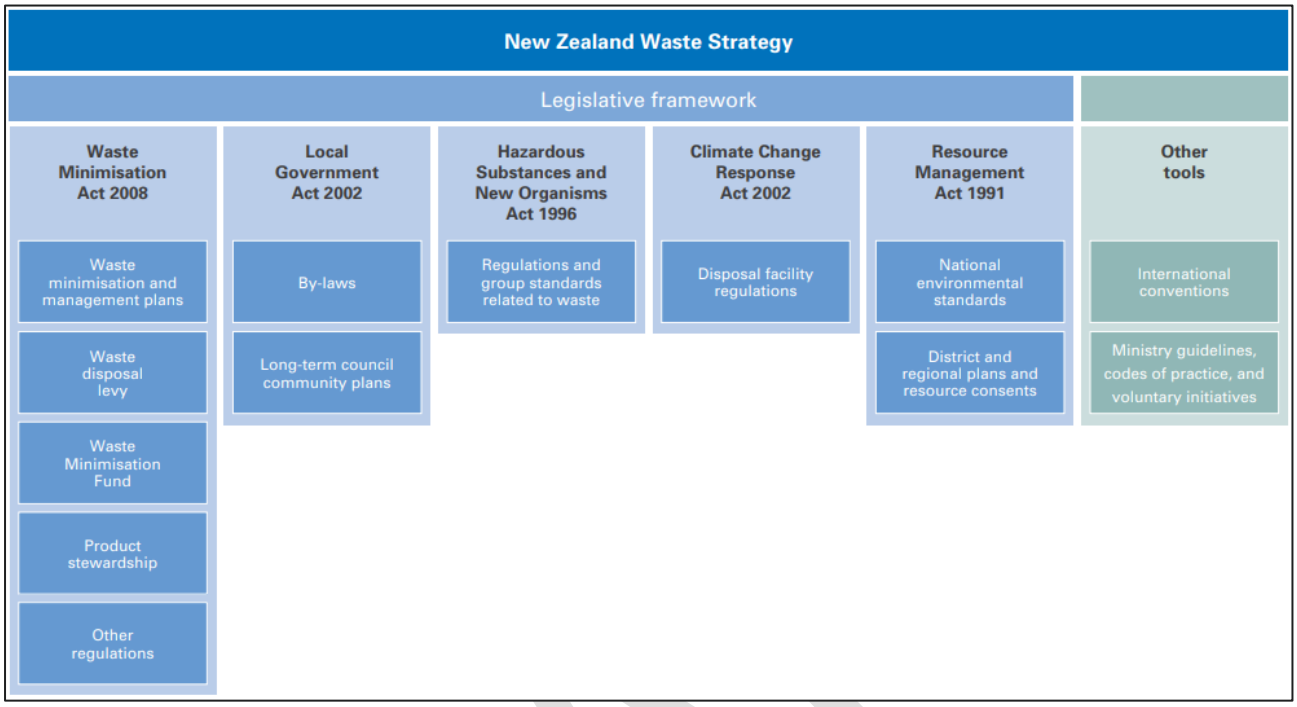


Figure 3: Existing Strategic and Legislative Framework (Source: New Zealand Waste Strategy 2010)

New Zealand Waste Strategy

Waste management and minimisation in Aotearoa New Zealand is underpinned by the existing New Zealand Waste Strategy 2010, which sets out the long term policy priorities for waste management and minimisation and allows for a flexible approach that can be adapted to different situations with only two goals:

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

Waste Minimisation Act 2008 (WMA)

The WMA is the primary legislation driving solid waste management and minimisation and its purpose is to:

> *"encourage waste minimisation and a decrease in waste disposal in order to*
>
> *(a) protect the environment from harm; and*
>
> *(b) provide environmental, social, economic, and cultural benefits."*

To achieve the aim, the WMA:

- imposes a levy on all waste disposed of in landfills to generate funding to help local government, communities and businesses minimise waste. The Waste Disposal Levy, which was initially set at $10/tonne in 2009, is progressively increasing annually from the current rate of $20/tonne in 2021 to $60/tonne on the 1st July 2024.
- establishes a process for government accreditation of product stewardship schemes, which recognises those businesses and organisations that take responsibility for managing the

environmental impacts of their products.

- requires product stewardship schemes to be developed for certain 'priority products' where there is a high risk of environmental harm from the waste or significant benefits from recovering the product. There are currently six priority products that must now be managed under a product stewardship scheme as follows: tyres; eWaste; refrigerants and other synthetic greenhouse gases; agrichemicals and their containers; farm plastics; and packaging (beverage packaging, single-use plastic packaging).
- allows for regulations to be made to control the disposal of products, materials, or waste, require take-back services, deposit fees or labelling of products.
- allows for regulations to be made that make it mandatory for certain groups (e.g., landfill facility operators) to report on waste to improve information on waste minimisation.
- clarifies the roles and responsibilities of territorial authorities with respect to waste minimisation.
- establishes the Waste Advisory Board to give independent advice to MfE on waste minimisation issues.

Climate Change Response Act 2002 and amendments

The Climate Change Response Act 2002 and the Climate Change Response (Emissions Trading Reform) Amendment Act 2020 provide the basis for the New Zealand Greenhouse Gas Emission Trading Scheme (ETS). The ETS requires landfill owners to purchase emission trading units to cover methane emissions generated from their landfill.

In August 2021, the New Zealand Government announced new regulatory settings for the ETS over the next five years to 2026, updating the overall cap on unit supply, setting auctioning volumes, and raising both the auction floor price and the cost containment reserve trigger price. The more stringent settings and increase in costs are in line with recent recommendations from the independent Climate Change Commission to strengthen the ETS to achieve New Zealand's first three five-year emissions budgets to 2035.

This is alongside the recent changes to increase the Waste Disposal Levy. When combined with the ETS, the additional costs are expected to reduce demand for landfill services and increase demand for recycling and waste diversion. They may also increase the need for enforcement to address illegal dumping.

The Litter Act 1979

The Litter Act provides Territorial Authorities with powers to create Litter Enforcement Officers or Litter Control Officers who have powers to issue infringement notices with fines for those who have committed a littering offence. The Litter Act is currently being reviewed alongside the WMA.

The Local Government Act 2002 (LGA 2002)

The LGA 2002 requires Territorial Authorities to assess how well they provide collection and reduction, reuse, recycling, recovery, treatment, and disposal of waste in their district, and makes Territorial Authorities responsible for the effective and efficient implementation of their WMMP. The LGA 2002 also contains various provisions that may apply to Territorial Authorities when they are preparing their WMMPs, including consultation and bylaw provisions.

The Resource Management Act 1991 (RMA)

The RMA is the main law governing how people interact with natural resources. As well as managing air, soil, freshwater, and the coastal marine area, the RMA regulates land use and the provision of infrastructure,

which are integral components of Aotearoa New Zealand's resource management system.

The RMA addresses waste management and minimisation activity through controls on the environmental effects of waste management and minimisation activities and facilities through national, district and local policy, standards, plans and consent procedures. In this role, the RMA exercises considerable influence over facilities for waste disposal and recycling, recovery, treatment, and others in terms of the potential impacts of these facilities on the environment.

The RMA is currently being reviewed and replaced with new legislation expected to be introduced in mid-2022.

Other Acts

In addition, a number of other Acts of Parliament provide various requirements for waste management and/or reduction of harm, or improved resource efficiency from waste products that Territorial Authorities and the public must follow. These include the:

- Local Government Act 2002
- Hazardous Substances and New Organisms Act 1996
- Health Act 1956
- Health and Safety at Work Act 2015
- Biosecurity Act 1993
- Radiation Protection Act 1965
- Ozone Layer Protection Act 1996
- Agricultural Chemicals and Veterinary Medicines Act 1997

Other Acts related to urban development and building

Various pieces of policy and legislation in the development and construction sector will have a direct impact on the management and impact of construction and demolition waste. The Resource Management (Enabling Housing Supply and Other Matters) bill was introduced at the end of 2021 and will allow up to three dwellings to be established on residential sites in in New Zealand's main urban areas, including Auckland, and greater Hamilton, Tauranga, Wellington, and Christchurch. In addition, it will speed up the implementation of the National Policy Statement for Urban Development, which enables greater intensification in those same cities. Many of these developments will not require resource consent.

This additional intensification is very likely to result in significant volumes of construction and demolition waste from the removal of existing dwellings, and construction of new dwellings.

In addition, amendments to the Building Act have recently been enacted to drive product stewardship, the recording of product information, and support the use of new, innovative, and efficient building methods.

5.2 National Waste Strategy and Legislation Review

The following section summarises the information that has been released as part of the Government reviews of the Waste Strategy and new and more comprehensive legislation on waste to replace the WMA and the Litter Act 1979. More details are included in the Waste Assessment in Appendix A.

5.2.1 Proposed Waste Strategy

To address the unsustainable linear "take, make, dispose" model, the Government is reviewing the 2010 Waste Strategy. Within the proposed Waste Strategy consultation document[14], they have identified that the management of waste needs to be long term and set a clear and strong direction towards a different way of thinking and living. That vision being toward a circular economy.

The proposed Waste Strategy will set an overall course for change with three broad stages out to 2050. For the first stage, to 2030, it includes proposed priority areas with supporting headline actions. It also includes specific targets for the whole of Aotearoa New Zealand, as well as for households and businesses out to 2030, to monitor and measure our progress. These targets include both reductions in waste generation and waste disposal, as set out in Table 11 below.

Alongside the Waste Strategy, MfE are working on a long-term waste infrastructure plan to guide investment in resource recovery infrastructure for Aotearoa New Zealand. That plan is due to be finalised at the same time as the strategy in late-2022. These two documents will then inform the first action and investment plan (AIP) that will set out the priorities and key actions needed in the short term. An AIP will be developed every two to three years to take stock of what we've done and where we need to go to achieve the vision and targets.

Table 11: Proposed Waste Strategy 2030 Targets

Area	Responsibility	Strategic target (by 2030)
Waste	Whole country	Reduce waste generation by 5 – 10% per person
	Public sector	Reduce waste generation by 30 – 50%
	Businesses	Reduce waste disposal by 30 – 50%
	Households	Reduce waste disposal by 60 – 70%
Emissions	Whole country	Reduce biogenic waste methane emissions by at least 30%
Litter	Whole country	Reduce litter by 60%

5.2.2 Proposed Waste Legislation

The Government is also proposing new and more comprehensive legislation on waste to replace the Waste Minimisation Act 2008 and the Litter Act 1979. The new combined legislation is intended to put in place the tools and arrangements that will deliver the new waste strategy and ensure, as a country, we make good use of funds generated by the expanded waste disposal levy.

New legislation will reset the purposes and principles, governance arrangements, and roles and responsibilities in waste legislation. The new Waste Act will aim to:

- embed a long-term strategic approach across central and local government for achieving change, supported by consistent data collection, evaluation, and reporting.
- create the governance and administrative framework needed to support effective investment and

[14] Ministry for the Environment. 2021. *Te kawe i te haepapa para | Taking responsibility for our waste: Proposals for a new waste strategy; Issues and options for new waste legislation*. Wellington: Ministry for the Environment.

use of waste levy funds.

- put individual and collective responsibility for how we deal with unwanted material at the heart of a new regulatory framework of obligations on organisations, households, and individuals, building on the duty-of-care model used in other jurisdictions.
- provide new and enhanced regulatory tools and levers to support the waste strategy and emissions reductions.
- create stronger accountability and reporting provisions.
- update and broaden compliance, monitoring, and enforcement powers, including for littering and dumping in public places.
- fix miscellaneous aspects of the existing legislation.

MfE have indicated that the development of the new legislation will align with the previously announced Waste Reduction Work Programme[15] and other reforms and amendments being undertaken nationally. This includes the draft Emissions Reduction Plan, discussed below, and the RMA Reforms that have been publicly consulted on separately.

5.2.3 Emissions Reduction Plan

In October 2021, the Government released their consultation document on the future draft Emissions Reduction Plan[16] that broadly accepted the independent Climate Change Commission advice to the Government on climate action in Aotearoa[17]. That advice presented ambitious, achievable, and equitable paths that Aotearoa New Zealand can take to meet its emission reduction targets and contribute to global efforts to address climate change.

This included recognising the commitment of Aotearoa New Zealand to reduce biogenic methane emissions by 10 per cent by 2030, and 24 – 47 per cent by 2050, relative to 2017 levels. While greenhouse gases (excluding biogenic methane) are to be zero by 2050[18]. Currently, Aotearoa is not on track to achieve these targets.

This affects waste disposal, including historical disposal of organic material at landfills, as waste currently make up 9 per cent of Aotearoa New Zealand's biogenic methane emissions and 4 per cent of the country's total greenhouse gas emissions.

In response, a number of proposals that specifically target emissions from waste includes, but is not limited to:

- Moving Aotearoa New Zealand towards a circular economy.
- Additional funding for education and behaviour change initiatives to help households, communities and businesses reduce their organic waste (for example, food, cardboard, timber).
- A proposal to ban the disposal of food, green and paper waste at landfills for all households and businesses by 1 January 2030. Particularly if they do not capture landfill gas.
- Standardised approach to kerbside collections for households and businesses, which prioritises

[15] Waste reduction work programme. Wellington: Ministry for the Environment. Published August 2021.
[16] Ministry for the Environment. 2021. *Te hau mārohi ki anamata | Transitioning to a low-emissions and climate-resilient future: Have your say and shape the emissions reduction plan.* Wellington: Ministry for the Environment
[17] *Ināia tonu nei: a low emissions future for Aotearoa - Advice to the New Zealand Government on its first three emissions budgets and direction for its emissions reduction plan 2022 – 2025*. Prepared by the Climate Change Commission. Dated 31 May 2021.
[18] As required under the Climate Change Response Act 2002.

separating recyclables such as fibre (paper and cardboard) and food and garden waste.

- Potentially supporting energy from waste schemes.
- Requiring transfer stations to separate and recycle materials, rather than sending them to landfill.
- Fast-tracking a waste data and licensing system so that better data can be collected on our waste.
- Developing a national infrastructure plan for waste and setting out a path for better resource recovery.

5.3 TCC Strategic Plans and Regulation

The following section summarises the local government strategic and legislative documents that set out the role, responsibilities, and powers of TCC in relation to waste management and minimisation. Further information and their relevance are contained in the Waste Assessment in Appendix A.

5.3.1 Long Term Plan 2021-2031 (LTP)

The LTP provides information on each activity the Council undertakes and outlines its key objectives and drivers, contribution to community outcomes, key projects for the 10-year period, and financial and asset management information. The LTP also sets targets to measure progress for each activity.

In relation to waste activities, the LTP sets several targets, as set out in Table 12 below. However, as previously discussed in section 3.3 of this WMMP, reliable data and reporting is an issue in the waste industry due to assumptions and the number of services and facilities. This has resulted in the setting of targets in the LTP that may be hard to accurately measure. For example, data utilised to set the target to reduce waste to landfill included waste collected from both Tauranga and the Western Bay of Plenty District. The waste to landfill target also does not include waste disposed at cleanfill or managed fill sites or biosolids to landfill, as these waste streams are not currently recorded in the Aotearoa New Zealand statistics on waste per capita.

This means that the targets and key performance indicators from the LTP have not been adopted verbatim. TCC will review its key performance indicators during the development of the 2024-2034 Long Term Plan. At this time, TCC will endeavour to align the WMMP and LTP targets based on new data and monitoring gathered over the next three years.

Table 12: Sustainability and Waste LTP 2021-2031 Targets

Level of Service	How it will be measured	2019/20 Result	2021/22 Target	2022/23 Target	2023/24 Target	2024/25 – 2030/31 Target
We will provide a rubbish collection service to all household properties in urban and rural-residential areas						
Percentage of residents that satisfied with Council run rubbish collection service.		New Measure	75%	75%	75%	75%
We will provide transfer stations, and maintain closed landfill sites						

Transfer stations provide customers with a 7-day service for rubbish and green waste facilities and free access to a recycling centre (except on Good Friday and Christmas Day)	Not achieved	Achieved	Achieved	Achieved	Achieved
Number of abatement notices/infringements issued in relation to closed landfill resource consents	Nil	Nil	Nil	Nil	Nil
Providing behaviour change programmes across community that target community behaviours and lead to a reduction of waste to landfill					
Average amount of waste sent to landfill per capita/per annum based on current operating environment Note: Refer to preceding text identifying data source.	523kg	550kg	500kg	450kg	450kg

5.3.2 Bylaws

TCC is able to make bylaws to protect the public from nuisance, to protect, promote and maintain public health and safety, and to minimise the potential for offensive behaviour in public places. This includes TCC operating in the role of regulator with respect to:

- management of litter and illegal dumping under the Litter Act 1979
- trade waste requirements
- nuisance-related bylaws
- licensing of waste operators under TCC's current Waste Management and Minimisation Bylaw 2012

Waste Management and Minimisation Bylaw 2012

The purpose of the Waste Management and Minimisation Bylaw is:

a. To promote waste minimisation and management objectives and to support the implementation of the WMMP, particularly where Tauranga City Council does not have direct control of the waste stream, and

b. To promote safe kerbside collection of waste, including recyclables, so that it does not accumulate and become offensive or harbour vermin.

This Bylaw also includes the ability to license operators and to require certain performance standards from them.

TCC is currently reviewing this Bylaw. It is intended to publicly consult on the WMMP and Bylaw at the same time in March 2022. The Bylaw proposes a number of changes, including, but not limited to:

- Improving waste operator licensing provisions so that there is better data collection and alignment with national legislative changes.
- Introducing Construction and Demolition waste management plans for projects within our city.
- Introduction of waste management plans and minimum requirements for waste bin storage and access for Multi-Unit Developments.

Trade Waste Bylaw 2019

TCC manages both liquid and solid waste. This includes trade waste, which is defined as in the Trade Waste Bylaw as "any liquid, with or without matter in suspension or solution, that is or may be discharged in the course of any trade or industrial process or operation, or in the course of any activity or operation of a like nature; and may include Condensing Water or Cooling Water and Stormwater which cannot be practically separated."

The purpose of the Trade Waste Bylaw is to:

a) protect the health and safety of people associated with the Wastewater System;

b) protect public health and the environment from the effects of Trade Waste discharges;

c) protect the Wastewater System from damage, misuse and interference;

d) enable Tauranga City Council to comply with the Resource Management Act 1991 particularly in respect to resource consents relating to the disposal of treated Wastewater, biosolids and discharges to air; and

e) manage the allocation of Wastewater capacity available to residential and Trade Waste customers.

5.3.3 The Solid Waste Asset Management Plan (2021)

The Solid Waste Assessment Management Plan details TCC sustainability and waste assets, which includes public and household bins, collection services, transfer stations, closed landfill, and education on sustainability and waste minimisation. It allows TCC to prepare for asset replacement and ensure that we undertake actions to provide a community agreed level of service in the most cost-effective manner while outlining associated risks. The plan defines the services to be provided, how the services are provided and what funds are required to provide the services over a 10-year planning period and aligns with the LTP.

5.3.4 The Tauranga City Plan (2013)

The Tauranga City Plan sets objectives, policies and rules for all subdivision, land use and development for all the land in our city. In relation to waste, there are provisions that recognise the functional and operational requirements of activities and development, in turn, requiring that that there is adequate space and an appropriate location for storage and waste management facilities. This includes on residential sites.

The City Plan is currently being review. It is expected that a series of plan changes to address issues, which could include further development controls for waste storage areas for new buildings/dwellings, will begin to be prepared in 2022.

5.4 Council and Industry Collaborations

TCC is contributing to multiple collaborative projects throughout New Zealand alongside Councils, waste management industry partners and the Ministry for the Environment. These collaborations include, but are not limited to:

1. Regional Waste Strategy, which is a joint assessment between the Bay of Plenty Regional Council and Waikato Regional Council to identify the contribution waste makes to greenhouse gas emissions.

2. Templates and best practice guidance for Waste Assessments, Waste Management and Minimisation Plans, and Solid Waste Bylaws with Waikato and Bay of Plenty Territorial Authorities.

3. Procurement of Waste Operator Licensing and Data with Waikato and Bay of Plenty Territorial Authorities.
4. Education and communication.
5. Researching and targeting specific areas of waste, such as construction and demolition, soft plastics, and aquaculture.

TCC is also an active member of WasteMINZ, who are the largest representative body of the waste, resource recovery and contaminated land management sectors in New Zealand. WasteMINZ acts on behalf of its members to achieve ongoing and positive development of the waste industry through strengthening relationships, facilitating collaboration, knowledge sharing and championing the implementation of best practice standards.

These connections and collaborations assist TCC in ensuring we are leading the way with waste management and minimisation best practice.

5.5 International Commitments

New Zealand is party to the following key international agreements:

- Montreal Protocol – to protect the ozone layer by phasing out the production of numerous substances
- Basel Convention – to reduce the movement of hazardous wastes between nations
- Stockholm Convention – to eliminate or restrict the production and use of persistent organic pollutants; and
- Waigani Convention – bans export of hazardous or radioactive waste to Pacific Islands Forum countries.

5.6 Other strategic considerations

Several national and global changes over recent years have impacted TCC's waste services as follows:

- The world is in transition, and circular economy is gaining momentum amongst governments, businesses, and non-government organisations. This growing international profile of the circular economy is due to its ability to deliver environmental benefits, increased resource efficiency, increased productivity, and job creation. Similarities amongst countries with ambitious circular economy goals include strong recycling and waste management frameworks, often augmented by specific laws that deal with packaging and other materials.
- As a result of other countries restricting the import of certain recyclables, primarily mixed paper, and mixed plastic, such as China's "National Sword Policy", there has been a significant reduction in the export of plastic overseas. In turn, Aotearoa must continue to review our national recycling and resource recovery infrastructure. Alternative markets must be developed to handle the volumes of waste materials no longer exported.
- COVID-19 has tested the resilience of the recycling systems nationally. In Tauranga, the MRF closed during the Level 4 nationwide lockdowns in early 2020 and mid-2021 to reduce the potential of the virus spreading. This resulted in materials that would normally be recycled being sent directly to landfill. This has resulted in ongoing issues with contamination of recycling waste within kerbside

and resource recovery parks, as behaviours were affected. Additionally, there has been a significant increase in the use of Personal Protective Equipment (i.e. masks) that is usually single-use, as well as a reduction in reusable packaging (i.e. coffee keep cups) to reduce the spread of COVID-19.

- Climate change will continue to impact upon waste infrastructure and services provided by Council. The National Climate Change Risk Assessment[19] highlights that active and closed landfills and contaminated sites across Aotearoa New Zealand are currently at risk from extreme weather events and sea-level rise, as well as coastal and inland flooding, erosion, and rising groundwater. For Tauranga, this could see our closed landfills at Te Maunga and Cambridge Road affected. Any site failures can cause pollutants to mobilise, with potentially cascading consequences for public health, ecosystems, and the economy. For Māori, the potential for closed landfill damage to contaminate mahinga kai (food-gathering areas) and affect taonga species is likely to have consequences for cultural practices.

In taking the above demand drivers into account it is noted that there will be continued pressure on existing waste management and minimisation infrastructure and services. While there is adequate landfill disposal capacity in the medium to long term future using the Hampton Downs or Tirohia landfills in the Waikato, TCC wants to improve its capacity to divert waste.

6 Public health protection

TCC consulted with the Medical Officer of Health during the preparation of our draft Waste Assessment. Their response is included in full in section 10 of the Waste Assessment.

As advised by the Medical Officer of Health, waste management is important for the health of the public. If not disposed of properly, waste can present a health hazard through physical injury, chemical poisoning, exposure to infectious material and encouraging pests such as vermin, flies, and mosquitoes. Waste can also block stormwater systems, contaminate land and water, and create odours.

While the Medical Officer of Health supports the vision and overall strategic direction proposed, they raised several matters for TCC to address that would ensure that public health would be protected. We have included specific actions in Part B, Section 1, of this WMMP and provided clarification within the final version of the Waste Assessment to address their concerns.

Based on this, we consider that we have achieved the outcomes sought by the Medical Officer of Health that to ensure public is protected, TCC provides and supports waste services and infrastructure in ways that do not increase the risk to health, are affordable, and are accessible to everyone no matter where they live in the city.

[19] National Climate Change Risk Assessment, published in August 2020 by the Ministry for the Environment.

7 Proposed methods for achieving effective and efficient waste management and minimisation

7.1 TCC's role

In undertaking this WMMP, TCC has considered what options are available for it to achieve effective and efficient waste management and minimisation to meet future demands for services and facilities.

The role of TCC includes:

Service provision	Providing or facilitating the provision of waste management or waste minimisation service
Governance	Investigating demand and the cost effectiveness of services and options to meet demand, either alone or in collaboration with other councils or private sector parties
Regulation	TCC using a legal mechanism to facilitate or promote waste management and waste minimisation e.g. bylaws and City Plan rules
Community leadership	Providing information and promoting awareness and involvement in waste management and waste minimisation activities
Education	Driving behaviour change in the public through education on waste minimisation and recycling, and how to use services available.

Advocacy	Promoting actions to address waste reduction and waste management issues which are outside TCC's direct control e.g. advocate for appropriate legislation, standards and guidelines to the Government
Financier	Investing in initiatives that facilitate waste management and minimisation activities, e.g. grants and subsidies

In providing waste management and minimisation services, TCC will aim to make existing services more cost effective and ensure that any increases to levels of services are both cost effective and affordable. TCC will, as far as practicably possible, make services accessible to the majority of the City.

PART B

8 Action Plan

The WMMP action plan sets out how TCC and the community can work together to achieve our vision, goals, and objectives. It sets out clear, practical initiatives that the Council will implement, either on our own or jointly, to achieve more effective and efficient waste management and minimisation in Tauranga and how we support this across Aotearoa New Zealand. To ensure that the activities undertaken are effective, TCC must be supported by private and civil society. In this, we need leadership from both within TCC and our community that will promote equitable solutions across the full spectrum of our community.

As previously discussed in this WMMP, the Action Plan is a 'living' document that can be regularly updated to reflect current plans and progress[20]. The action plan will be reviewed and updated annually based on waste data collection and reporting. This ensures that TCC is agile and able to adapt and respond to any unforeseen or emerging issues, or changes in resource recovery nationally and internationally, including but not limited to, legislative and technological.

We will report to Council on progress of our Action Plan and Targets on a quarterly basis and share the results with our community.

The actions are grouped under seven themes:

1. Regulation
2. Monitoring, Data Collection and Evaluation
3. Collections and Services
4. Facilities
5. Biosolids
6. Communication and Education
7. Leadership and Collaboration

[20] Under section 44 of the WMA 2008, Waste Management and Minimisation Plans can be updated without triggering the need for a formal review of the Waste Management and Minimisation Plan, as long as the changes are not significant and do not alter the direction and intent of the Waste Management and Minimisation Plan.

Table 13: WMMP Action Plan

	Action	New / Existing action?	Implementation timeframe	Funding source	Waste Hierarchy
THEME: REGULATION					
1	Investigate, consider, and prepare a Tauranga Waste Strategy and road map with a long-term 30 year horizon to set out a path for better resource recovery in the City and wider region. The key objective will be to drive and support the transition to a circular economy. This will be supported by the preparation of a city and regional infrastructure plan for waste that recognises our waste facilities as a strategic network that is critical to the functioning and growth of our city.	New	FY 22/23	General rates / Waste levy funds	Reuse, recycling, and recovery
2	Investigate, consider, trial, and establish an "Underused Assets Register" for TCC and our community that identifies assets that are under used, stranded, or entirely abandoned across Tauranga. These assets may include staff, raw materials, tools, equipment, and vehicles, as well as production, distribution, and storage facilities. An online register of these assets could facilitate asset sharing and redeployment to optimise and maximise their use to not only reduce waste, but also stimulate the economy, and cut costs.	New	FY 22/23	General rates / Waste levy funds	Reuse, recycling, and recovery
3	Investigate, consider, and prepare a Disaster Waste Management Plan that identifies hazards and risks and outlines how waste generated because of a disaster (earthquake, flood, volcanic eruption, etc) will be managed across the region. This may include establishing facilities for the safe storage, disposal, recovery, and treatment of waste in such events.	Existing	FY 22/23	General rates	Recycling, recovery, and disposal
4	Investigate, consider, and respond to the potential effects of climate change on waste services and facilities. This may require adaptation, such as relocation of facilities if deemed necessary, to help drive resilience in managing waste.	New	FY 22/23	General rates	

5	Develop a cross-Council carbon emissions reporting methodology to reflect progress against targets within the Aotearoa New Zealand Emissions Reduction Plan.	New	FY 22/23	General rates	
6	Investigate, consider, trial, and implement solutions that will reduce greenhouse gas emissions associated with the provision of Council-led waste services and facilities. This could include: • lowering emissions from services by utilising low-emitting carbon vehicles • lowering emissions from buildings by improving the operational efficiencies of buildings, by reducing energy and water use, and improving ventilation and building temperatures), and • reducing the whole of life embodied carbon footprint of buildings.	New	FY 22/23	General rates	
7	Support the development of a TCC sustainable procurement action plan and strategy with a focus on a circular economy to eliminate and reduce waste. This could include: • taking a life-cycle approach to consider the whole life-cycle of a product or service so that products do not produce waste that ends up in landfill, and • ensuring that any potential negative environmental and social impacts of a product or service to be procured are prevented, and where these cannot be completely prevented, minimised, or mitigated. • promotion and implementation of a Recycled First Policy that would require that for such projects, bidders must demonstrate how they will optimise the use of recycled and reused materials. Successful contractors must then monitor and report on the types and volumes of recycled and reused products they used.	New	FY 22/23	General rates	

8	Investigate and extend the existing Waste Management and Minimisation Bylaw to support implementation of this WMMP.	New	FY 21/22	General rates / Waste levy funds	Recycling, recovery, and disposal
9	Undertake enforcement actions under the Waste Management and Minimisation Bylaw.	Existing	Ongoing	General rates	Disposal
10	Continue to actively enforce litter and illegal dumping infringements under the Litter Act (and any new legislation).	Existing	Ongoing	General rates	Disposal
THEME: MONITORING, DATA COLLECTION AND EVALUATION					
11	Conduct waste audits, including but not limited to, at our Resource Recovery Parks, within our kerbside services and in partnership with private licensed waste operators. Undertake monitoring, research, evaluation, and communication of waste audit results.	Existing	Ongoing	General rates / Waste levy funds	Recycling, recovery, and disposal
12	Research community values, attitudes, and behaviour in regard to waste, to support programme development, information and education campaigns and ongoing evaluation of the effectiveness of TCC interventions.	Existing	Ongoing	General rates / Waste levy funds	Recycling, recovery, and disposal
13	Monitor, report on, and update the Action Plan within the Waste Management and Minimisation Plan 2022-2028.	New	Ongoing	General rates / Waste levy funds	Recycling, recovery, and disposal
14	Identify areas for improvement in TCC led services and behaviour change programmes and implement changes to improve data collection and analysis.	Existing	Ongoing	General rates / Waste levy funds	Recycling, recovery, and disposal
15	Investigate, consider, trial, and implement innovative smart technology solutions for waste management. Smart technologies could include: Smart public realm bins, RFID tagging (use of pay-by-weight mechanisms) and rubbish collection vehicle GPS tracking, automated waste collection, and mechanical separation of waste.	New	FY 22/23	General rates / Waste disposal levy	Reduce, recycling, recovery, and disposal

16	Investigate, consider, trial, and implement a comprehensive waste data and licensing system in collaboration with other Territorial Authorities and the Central Government.	Existing	Ongoing	General rates	
THEME: COLLECTIONS AND SERVICES					
17	Investigate, consider, trial, and implement solutions that will increase the diversion of waste from landfill. This could include, but not be limited to, the provision of waste collection services for rubbish, recycling, and garden, and food waste to small and medium enterprises, businesses, community organisations, and education facilities.	New	FY 22/23	General rates / Waste disposal levy	Reduce, recycling, recovery, and disposal
18	Investigate, consider, trial, and implement solutions for the diversion of construction and demolition waste in collaboration with private industry. Investigations could include, but not be limited to, audits of waste from prefabrication vs traditional builds, assessments on the whole of life embodied carbon from on-site construction activities, the potential impacts of materials once a building has reached the end of its useful life, and designing for re-use and recycling, rather than disposal.	New	FY 22/23	Waste disposal levy	Reduce, recycling, recovery, and disposal
19	Investigate, consider, trial, and implement services for targeted waste streams, particularly hard-to-recycle items, such as soft plastics, small lids, textiles and batteries. This will include collaborating with Local Government organisations, non-governmental organisations, and other key stakeholders, to support Government regulated product stewardship schemes. As well as voluntary, industry-led product stewardship schemes that meet best practice.	New	FY 22/23	Waste levy fund / Grants and Funds / User Pays	Reduce, recycling, recovery, and disposal
20	Investigate, consider, trial, and implement solutions to reduce waste associated with tourism in Tauranga and across the region. For example, establishing recycling stations for cruise ship docking areas.	New	FY 22/23 and ongoing	Waste levy fund / Grants and Funds / User Pays	Reduce, recycling, recovery, and disposal

21	Investigate, consider, trial, and implement a new inorganic service with the goal to improve diversion from landfill and reduce illegal dumping. This could include a rates-funded option for all households and eligible commercial properties to receive an opportunity to book an annual pick-up collection. Waste that can be reused, refurbished, upcycled, or repurposed will be diverted through a community-led recovery facility.	New	FY 22/23 and ongoing	Waste levy fund / User fees, and General rates	Reduce, recycling, recovery, and disposal
22	Investigate, consider, trial, and implement a new amnesty collection event for hazardous substances with the goal to improve diversion from landfill and reduce illegal dumping. This could include an annual free drop-off at a Resource Recovery Park.	New	FY 22/23 and ongoing	Waste levy funds / User fees and Rates	Recovery and disposal
23	Investigate, consider, trial, and implement initiatives to support, promote and facilitate diversion of food from landfill. This could help support the '*Mana Kai Mana Ora Draft Food Sovereignty and Security Plan*', of which, one of the aims is to ensure sustainability of local food hubs, food banks, and food rescue. As well as the Tauranga Food Security Hub.	New	FY 22/23 and ongoing	Waste levy funds	Reduce, recovery, and disposal
24	Promote food waste prevention, food rescue initiatives and home and community composting alongside the kerbside food collection service.	New	FY 22/23 and ongoing	Waste levy funds	Reduce, recovery, and disposal
25	Consider information, investigate, and support, where appropriate, energy from waste schemes. This includes bioenergy from biomass, which is energy largely derived from the by-products and residues of plants and animals.	New	FY 22/23 and ongoing	Waste levy funds	Recovery, and disposal
26	Collaborate with District Health Boards and the medical / health industry to inform residents, and medical and dental professions about disposal options available for medical and dental wastes. Gaps will be identified where further work is required to find solutions to divert this waste.	New	FY 22/23 and ongoing	Waste levy funds / User fees and Rates	Reduce, recovery, and disposal
27	Collaborate with District Health Boards, childcare facilities and rest homes and industry to develop options to increase diversion of nappies and sanitary products from landfill.	New	FY 22/23 and ongoing	Waste levy funds / User Fees	Reduce

28	Investigate, consider, trial, and implement changes to support a circular economy, where businesses and community enterprises use innovative reduce, reuse, repair, rent, share, and recycle models of working.	New	FY 22/23 and ongoing	Waste levy funds / User Fees	Reduce
29	Investigate, consider, trial, and implement changes associated with public place litter and recycling bins and collection services with effective communication. This could include introducing new services at specific targeted locations.	Existing	Ongoing	General rates / Waste levy funds	Reduce, recycling, recovery, and disposal
30	Investigate, consider, trial, and implement changes to anti-litter / illegal dumping communication campaigns to target behaviour change and consider enforcement options.	Existing	Ongoing	General rates / Waste levy funds	Reduce, recycling, recovery, and disposal
THEME: FACILITIES					
31	Continue to provide services for a wide range of materials at the Te Maunga Resource Recovery Park.	Existing	Ongoing	User fees & charges / Grants and Funds / Waste levy funds	Reuse, recycling, recovery, and disposal
32	Investigate, consider, trial, and implement changes at the Te Maunga Resource Recovery Park and on other land in Tauranga to offer improved waste management and minimisation including: • a waste minimisation education centre • construction and demolition diversion trials, such as deconstruction of dwellings on/off-site • organic composting and compostable packaging trials • alternative disposal/treatment of residual waste • supporting community-led resource recovery • supporting legislative and Central Government changes, such as, facilities for accredited Product Stewardship schemes, Circular	New / Existing	Ongoing	User fees & charges / Grants and Funds / Waste levy funds	Reuse, recycling, recovery, and disposal

	Economies and Container Return Schemes				
33	Safely monitor and manage closed landfills in accordance with resource consent conditions and best practice.	Existing	Ongoing	General rates	
34	Consider and respond to Government legislative changes associated with reducing methane emissions from closed landfills. This could require assessing and monitoring the volumes of methane being discharged to air from any closed landfills and implementing gas capture, where appropriate.	New	FY 22/23	General rates	
35	Investigate, consider, trial, and implement solutions for regional waste processing facilities. This will include collaboration with MfE, Regional Council, other Territorial Authorities, private waste operators, and the community. The key focus could be targeting specialist plastic streams, such as from the construction, aquaculture, and agricultural sectors.	New	FY 22/23	Waste levy fund / Grants and Funds / User Pays	Reduce, recycling, recovery, and disposal
36	Investigate, consider, and support the establishment of research and development centre for reuse and remanufacture of products and materials into new products and materials.	New	FY 22/23	Waste levy fund / Grants and Funds	Reuse, recycling, recovery, and disposal
THEME: BIOSOLIDS					
37	Investigate, consider, trial, and implement innovative solutions for the recovery and reuse of biosolids.	Existing	Ongoing	Targeted rates for wastewater or water service charges and Waste levy funds	Reuse, recovery, and disposal
THEME: COMMUNICATION AND EDUCATION					
38	Deliver targeted behaviour change programmes on waste minimisation (reduce, reuse, recycle, compost), litter and illegal dumping. Target audiences include, but are not limited to, households, businesses, schools, community organisations, events, and the wider community.	Existing	Ongoing	General rates / Waste levy funds	All

39	Ensure the community are informed of and utilise existing and new waste and recycling services and facilities through effective communications, resources, and behavioural change programmes.	Existing	FY 22/23	General rates / Waste levy funds	All
40	Regularly evaluate behavioural change programmes and research community values, attitudes, and behaviours, to support waste programme development and communications.	Existing	FY 22/23	General rates / Waste levy funds	All
41	Create partnerships within the community to encourage a more consistent approach to education and behaviour change programmes throughout the community.	Existing	FY 22/23	General rates / Waste levy funds	All
42	Implement a disaster / crisis waste communications plan	New	FY 22/23	General rates / Waste levy funds	Disposal
THEME: LEADERSHIP AND COLLABORATION					
43	Investigate, consider, trial, and implement opportunities to enhance economic development through waste management and minimisation solutions in collaboration with: • other councils (regional and local) in the Bay of Plenty and nationally • private sector and community groups • tangata whenua	New	Ongoing	General rates / Waste levy funds	Reuse, recycling, and recovery
44	Investigate, establish, and support a Māori-led waste forum in partnership with tangata whenua. The purpose would be to consider and implement changes to take into account tikanga and mātauranga Māori when taking responsibility for our waste and forum.	New	FY 22/23	General rates / Waste levy funds	All
45	Be a role model to other organisations by: • ensuring that TCC is sustainably managing its own waste as effectively as possible	Existing	Ongoing	General rates / Waste levy funds	Reduce, reuse, recycling, and recovery

	• implementing changes in TCC buildings, including Council Controlled Organisations that result in further waste reduction and diversion from landfill				
46	Maximise diversion of waste from landfill for TCC and Council Controlled Organisation projects and operations, such as: • Reducing, reusing, recycling, and recovering construction and demolition waste associated with the Civic Centre redevelopment. • Composting garden waste from TCC parks maintenance projects. • Composting food waste from TCC and Council Controlled Organisation buildings. • Recycling textiles such as from TCC uniforms.	Existing	Ongoing	General rates / Waste levy funds	Reduce, reuse, recycling, and recovery
47	Continue to advocate to Central Government for the introduction of mandatory product stewardship schemes.	Existing	Ongoing	General rates	Reduce, reuse, recycling, and recovery
48	Continue with an annual community contestable fund offered by Council that supports projects that minimise waste to landfill. Each year TCC will advertise the specific priority outcomes, which will align with our Action Plan, when applications open. This will also include the terms and conditions of any grants.	Existing	Ongoing	Waste levy funds	Reduce, reuse, recycling, and recovery
49	Review the 2022-2028 Waste Management and Minimisation Plan, including the preparation of a Waste Assessment. Develop a new Waste Management and Minimisation Plan for 2028-2034 with the community.	New	FY 27/28	Waste levy funds	
50	Consider and respond to Government legislative changes, including but not limited to, the Aotearoa New Zealand Waste Strategy, Waste Minimisation Act and Litter Act, Resource Management Reforms. Any new requirements or changes can be implemented as a new action within this WMMP action plan annually.	Existing	Ongoing	General rates	

51	Investigate and develop objectives, policies, and rules to be included within the Tauranga City Plan, which is currently being reviewed. These provisions will support waste management and minimisation activities by, for example, recognising the functional and operational requirements of activities and development and providing adequate space and location for storage and waste management facilities on residential, commercial, and industrial sites.	New	Ongoing	General rates	

9 Funding the Action Plan

9.1 Funding the action plan

The action plan will be funded using the suite of tools available to TCC in the delivery of waste services. The activities will be funded by:

- General rates
- Targeted rates
- Fees and charges (including Resource Recovery Park gate fees, Waste Operator Licensing fees, user pays, and fines)
- Subsidies and grants
- Debt (if required)
- Waste Disposal Levy

Table 14: Summary of TCC services currently provided and their funding methods

TCC Service	Funding Methods
Waste minimisation education, promotion, enforcement (e.g. by law), communication, monitoring and policy development	National waste disposal levy Sale of recyclables General rate
Kerbside collection of rubbish	Targeted rate
Kerbside collection of recyclables and glass	Targeted rate
Kerbside collection of food waste	Targeted rate
Kerbside collection of garden waste	Targeted rate (opt in)
Specific types of waste disposal at Te Maunga Resource Recovery Park	User charges General rate
Diversion at Te Maunga and Maleme Street RRP	General rate Local waste disposal charge Waste Minimisation Fund Other community and industry grants and subsidies
Provision of public litter and recycling bins	General rate Other community and industry grants and subsidies

9.2 Waste disposal levy funding expenditure

TCC will continue to use the waste disposal levy funding income to provide funding for waste minimisation activities, including:

- Waste education and behaviour change
- Investigations and trials
- Capital expenditure for diversion facility upgrades
- Community engagement and initiatives

As discussed under section 5 of this WMMP, TCC receives a portion of the national waste disposal levy funds from MfE. This has historically been calculated on a per capita basis and TCC understands this will continue until new legislation is introduced in late-2022.

Last year, TCC received $488,153.21 from the waste disposal levy. This was based on $10/tonne. However, as the disposal fee progressively increases annually up to $60/tonne from July 2024, TCC expects to see an increase in funding. This will allow us to expand and undertake new activities within our Action Plan that will divert waste from landfill.

9.3 Grants

Section 47 of the Waste Minimisation Act gives councils the ability to give grants to a person, organisation, or group to promote or achieve waste management and minimisation. Under this WMMP, TCC will continue to give grants at its discretion and on any terms or condition it deems appropriate provided there is an allocated and approved budget for that activity.

For the 2022-23 financial year, TCC is proposing a contestable waste minimisation fund of $75,000.00. The funds for the remaining five years of WMMP are still to be set.

10 Monitoring, evaluating, and reporting progress

TCC will monitor, evaluate, and report on progress against our vision, goals, and objectives, and targets on a quarterly basis. Progress will be reported through TCC publications, our website, and the TCC Annual Report. The reporting will include a summary of progress and activities undertaken from the Action Plan and identify where unforeseen or emerging issues need to be addressed. On an annual basis, TCC will update, if necessary, the Action Plan to address any of the identified issues. Any new actions will be aligned with our vision, goals, and objectives.

TCC will also provide progress reports of expenditure of its waste disposal levy funds to the Ministry for the Environment.

In addition to the WMMP targets, and as previously highlighted in section 3.3 of this WMMP, TCC will also be reporting on our levels of service and key performance indicators for waste services as set out in the 2021-2031 Long Term Plan. These are focussed on:

- Providing a waste collection service to all residential properties in urban and rural-residential areas and ensuring residents are satisfied with the Council service.
- Providing a Resource Recovery Park that is accessible to the public, including free access to a

recycling centre, all year except on Good Friday and Christmas Day.

- Maintaining closed landfill sites with no abatement notices/infringements issued as a result of any breaches of relevant resource consent conditions.
- Providing behaviour change programmes across community that target community behaviours and lead to a reduction of waste to landfill.

However, as was highlighted in this WMMP, the way the collection of waste data is notoriously difficult due to the number of services and facilities locally, regionally, and nationally, including private and Council owned. Therefore, historical monitoring and reporting our analysis has been inconsistent.

Moving forward, TCC will focus on its data collection and reporting on waste streams, services, and facilities that we can control. Data will be gathered through community satisfaction surveys, TCC records (call centre records, KPIs, etc.), licensing requirements, contractors, and SWAPs. We will also enact any national data collection and reporting requirements that are mandated by Government.

TCC will review its LTP key performance indicators during the development of the 2024-2034 Long Term Plan. At this time, TCC will endeavour to align the WMMP and LTP targets based on new data and monitoring gathered over the next three years.

Glossary

The following table provides a summary of the key Definitions and abbreviations used in this WMMP.

Term:	Definition:
Accessway	Has the same meaning as in section 315 of the Local Government Act 1974, which states: 'In this Part, unless the context otherwise requires,— access way means any passage way, laid out or constructed by the authority of the council or the Minister of Works and Development or, on or after 1 April 1988, the Minister of Lands for the purposes of providing the public with a convenient route for pedestrians from any road, service lane, or reserve to another, or to any public place or to any railway station, or from one public place to another public place, or from one part of any road, service lane, or reserve to another part of that same road, service lane, or reserve'.
Act (the Act)	Waste Minimisation Act 2008.
Approved	Approved in writing by the Council, either by resolution of the Council or by any authorised officer of the Council.
Approved container	Any container (including bags) that has been approved by the Council for the collection of any type of waste, with approval based on the following criteria: the prevention of nuisance, the protection of the health and safety of waste collectors and the public, and the achievement of effective waste management and minimisation.
Authorised Officer	Any officer of the Council or any other person authorised under the Local Government Act 2002 and authorised by the Council to administer and enforce its bylaws.
Building work	As defined in the Building Act 2004 and includes any work for, or in connection with, the construction,alteration, demolition, or removal of a building. It can include sitework and design work relating to the building work.
Bylaw	Refers to the Tauranga City Council "[Draft] Tauranga City Council Waste Management and Minimisation Bylaw 2022".
City Boundaries	The area administered by the Tauranga City Council.
Cleanfill material	Waste that: • does not undergo any physical, chemical or biological transformation that, when deposited or with the effluxion of time, is likely to have adverse effects on the environment or human health; and

	• is not diverted material; and • includes materials such as clay, soil and rock, and other inert materials such as concrete or brick that are free of: • combustible, putrescible, degradable or leachable components; • hazardous waste; • products or materials derived from hazardous waste treatment, hazardous waste stabilisation or hazardous waste disposal practices; • materials that may present a risk to human health or the environment; and • liquid waste; and • has less than two percent by volume by load of tree or vegetable matter.
Cleanfill site	The facility used for the disposal of cleanfill material.
Commercial waste	Waste that results from a commercial enterprise and includes waste generated by the carrying on of any business, manufacture, process, trade, market, or other undertakings
Construction and demolition waste	Waste generated from any building work (including construction, renovation, repair or demolition); and includes but is not limited to concrete, plasterboard, insulation, nails, wood, steel, brick, paper, roofing materials, wool/textiles, cardboard, metals, plastic or glass, as well as any waste originating from site preparation, such as dredging materials, tree stumps, asphalt and rubble.
Council	Refers to Tauranga City Council - the elected member body representing Tauranga or authorised to act on its behalf.
Council collection points	Places or containers where approved containers may be left for collection or waste may be deposited if collection from a public place is unfeasible or impractical.
Deposit	To cast, place, throw or drop any waste or diverted material.
Dispose or Disposal	As defined in the Waste Minimisation Act 2008, which states: …disposal means— (a) the final (or more than short-term) deposit of waste into or onto land set apart for that purpose; or (b) the incineration of waste.
Disposal facility	A facility, including a landfill, at which waste is received and which operates, at least in part, as a site to dispose of waste, but does not include a cleanfill site.

Diverted material	As defined in the Waste Minimisation Act 2008, which states: diverted material means anything that is no longer required for its original purpose and, but for commercial or other waste minimisation activities, would be disposed of or discarded.
Domestic waste	Waste consisting of refuse, recyclable material or organic matter (food waste and/or greenwaste) originating from any household or from the cafeteria, lunchroom or canteen of any commercial enterprise but does not include, commercial or industrial waste, prohibited waste, hazardous waste, trade waste, liquid waste, or construction and demolition waste.
Donation collection point	Place where approved types of waste may be deposited for the purposes of raising funds from the waste items.
Estimated value	As defined in the Building Act 2004, which states: estimated value, in relation to building work, means the estimated aggregate of the consideration, determined in accordance with section 10 of the Goods and Services Tax Act 1985, of all goods and services to be supplied for the building work.
Event	Any organised temporary activity of significant scale that is likely to create litter and includes (but is not limited to) an organised gathering, open-air market, parade, sporting event, protest, festival, film shoot, concert or celebration. An event will be considered significant if it has an expected attendance of 500 or more people across the duration of the event, whether it be a single or multi-day event. Events involve large groups of people either as participants or spectators. For the purpose of this Bylaw 'event' excludes: • Indoor private functions • Indoor tasting and sampling activities • Indoor performances, markets, displays, exhibitions or conferences • Any regularly occurring recreational activities such as weekly sporting events. • Open-aired events that are enclosed within a building or structure. This definition applies only where the activity is not covered by another definition/activity in the Tauranga City Plan.
Food waste	Waste that is derived from any item of food and is organic in origin and free of contamination and includes fruit and vegetable scraps, meat, fish and bone discards, and any other similar food waste.
Footpath	The same meaning as in section 315 of the Local Government Act 1974, which states:

	footpath means so much of any road as is laid out or constructed by authority of the council primarily for pedestrians; and includes the edging, kerbing, and channelling thereof.
Garden waste	Compostable plant material including lawn clippings, weeds, plants and other soft vegetable matter, which by nature or condition, and being free of any contaminants will degenerate into compost. This does not include flax, bamboo, pampas, flowering gorse, palm trees or cabbage trees.
Handling waste	Removing, collecting, transporting, storing, treating, processing or disposing of waste.
Hazardous waste	Waste that is reasonably likely to be or contain a substance that meets 1 or more of the classification criteria for substances with explosive, flammable, oxidising, toxic, corrosive or ecotoxic properties under the Hazardous Substances (Classification) Notice 2017. Hazardous waste does not include domestic waste, inorganic material, construction and demolition waste, or commercial or industrial waste.
Home composting	The activity of creating decaying organic matter from domestic garden waste and/or food waste into compost.
Illegal dumping	The disposal of waste in an unauthorised or non- dedicated area.
Inorganic waste	Waste consisting of household equipment, furniture, appliances and material of a similar type that due to its nature or size cannot be collected as domestic waste in an approved container, and that is specified by the Council as suitable for: • collection from a public place by the Council; • collection from any premises by the Council; or • delivery to a resource recovery facility.
Licence	A licence, consent, permit or approval to do something under this Bylaw and includes any conditions to which the licence is subject.
Litter	Includes any refuse, rubbish, animal remains, glass, metal, garbage, debris, dirt, filth, rubble, ballast, stones, earth, or waste matter, or any other thing of a like nature.
Litter container	A container provided for the collection of litter.
Manager	A person who controls or manages any premises, activity, or event, regardless of whether that person has a proprietary interest in those premises or that activity or event. This includes a Body Corporate.
Multi-unit	A development consisting of two or more separately occupied residential units, whether in the same building or in separate buildings, and held either

development	in common ownership or in separate ownership. This includes a unit title development, a mixed-use premise with business activities, and any development with controlled or restricted access, such as a gated community.
Nuisance	A nuisance in terms of the Health Act 1956.
Occupier	In relation to any property or premises, the inhabitant occupier of that property or premises and, in any case where any building, house, tenement, or premises is unoccupied includes the owner.
Organic matter	Food waste and/or garden waste that is specified by the Council under clause 6 of this Bylaw as organic matter
Owner	In relation to any property or premises, the person entitled to receive the rack rent of the property or premises, or who would be so entitled if the property or premises were let to a tenant at a rack rent.
Person	An individual, a corporation sole, a body corporate, and an unincorporated body.
Premises	Any separately occupied land, dwelling, building, or part of the same.
Prohibited waste	Waste containing: • any material capable of causing injury to any person or animal unless the material is sufficiently contained to prevent injury; • any material capable of causing damage to the approved container or likely to shatter in the course of collection material unless the material is sufficiently contained to prevent damage to the approved container or to prevent injury; • any material that may endanger any person, animal or vehicle which may come in to contact with it prior to, during or following collection, transportation or disposal; • any radioactive wastes, but excluding domestic smoke detectors; • any used oil and lead-acid batteries; • any hazardous waste; • medical waste; • any material identified by the Council under clause 6 of this Bylaw as posing an unacceptable risk of nuisance to the public or to public health and safety, subject to a control made under clause 9 below.
Public place	As defined in the Litter Act 1979, which states: public place includes—

	• every motorway, road, street, private street, footpath, access way, service lane, court, mall, and thoroughfare: • any public reserve within the meaning of section 2 of the Reserves Act 1977 to which the public generally has access, whether with or without payment of any fee, and any reserve under that Act classified as a nature reserve or a scientific reserve: • any park, garden, or other place of public recreation to which the public has access, whether with or without payment of any fee: • any beach or foreshore, or the bank of any river or stream, or the margin of any lake, to which the public traditionally has access, whether with or without payment of any fee: • any waters to which the public traditionally has access, whether with or without payment of any fee, for bathing or other recreational purposes: • every wharf, pier, or jetty (whether under the control of a harbour board or not) to which the public has access: • any conservation area within the meaning of the Conservation Act 1987: • any airport within the meaning of section 2 of the Airport Authorities Act 1966: • any cemetery within the meaning of section 2 of the Burial and Cremation Act 1964: • any land vested in or controlled by any local authority (within the meaning of section 5(1) of the Local Government Act 2002) or the Crown, being land that is not occupied pursuant to any lease, licence, or other authority by any private person: • any national park constituted under the National Parks Act 1980: • any other place whether public or private in the open air, including any walkway within the meaning of section 4 of the Walking Access Act 2008, to which the public has access, whether with or without payment of any fee,— but does not include any site for the disposal of litter, or any receptacle installed in any such public place pursuant to this Act or any other Act.
Recovery	As defined in the Waste Minimisation Act 2008, which states: recovery— means extraction of materials or energy from waste or diverted material for further use or processing; and includes making waste or diverted material into compost
Recyclable material	The types of waste that are able to be recycled and that may be specified by the Council from time to time under this Bylaw.

Recycling	As defined in the Waste Minimisation Act 2008, which states: recycling means the reprocessing of waste or diverted material to produce new materials
Reserve	Any open space, playing field, plantation, park, garden or ground set apart for public recreation or enjoyment which is under the management or control of the Council and includes any Facility, structure or building within those reserves.
Road	The same meaning as in section 315 of the Local Government Act 1974, which states: road means the whole of any land which is within a district, and which— • immediately before the commencement of this Part was a road or street or public highway; or • immediately before the inclusion of any area in the district was a public highway within that area; or • is laid out by the council as a road or street after the commencement of this Part; or • is vested in the council for the purpose of a road as shown on a deposited survey plan; or • is vested in the council as a road or street pursuant to any other enactment;— and includes— except where elsewhere provided in this Part, any access way or service lane which before the commencement of this Part was under the control of any council or is laid out or constructed by or vested in any council as an access way or service lane or is declared by the Minister of Works and Development as an access way or service lane after the commencement of this Part or is declared by the Minister of Lands as an access way or service lane on or after 1 April 1988: • every square or place intended for use of the public generally, and every bridge, culvert, drain, ford, gate, building, or other thing belonging thereto or lying upon the line or within the limits thereof;— • but, except as provided in the Public Works Act 1981 or in any regulations under that Act, does not include a motorway within the meaning of that Act or the Government Roading Powers Act 1989.
Site	For the purposes of this Bylaw means an area of land that is the subject of an application for a building consent or an area of land where a specific development or activity is located or is proposed to be located.
Treatment	As defined in the Waste Minimisation Act 2008, which states:

	treatment— means subjecting waste to any physical, biological, or chemical process to change its volume or character so that it may be disposed of with no or reduced adverse effect on the environment; but does not include dilution of waste.
Waste	As defined in the Waste Minimisation Act 2008, which states: waste— means anything disposed of or discarded; and includes a type of waste that is defined by its composition or source (for example, organic waste, electronic waste, or construction and demolition waste); and to avoid doubt, includes any component or element of diverted material, if the component or element is disposed of or discarded.
Waste collector	A person or entity who collects or transports waste and includes commercial and non-commercial collectors and transporters of waste (for example, community groups and not-for-profit organisations); but does not include individuals who collect and transport waste for personal reasons (for example, a person taking domestic garden waste to a waste management facility).
Waste Container	Container utilised for the collection of waste.
Waste management facility	A facility, authorised by Council, which primarily provides waste management and disposal services or waste remediation and materials recovery services, in relation to solid waste. Includes but is not limited to waste transfer stations, resource recovery stations, recycling centres, composting facilities, landfills or cleanfill sites, or hazardous waste facilities.
Waste management facility operator	A person who owns or manages a waste management facility.
Waste Management and Minimisation Plan	A waste management and minimisation plan adopted by the Council under section 43 of the Waste Minimisation Act 2008.
Waste operator	A person who is a waste operator or operates a waste management facility.
Waste remediation and materials recovery services	The remediation and clean-up of contaminated buildings and mine sites, mine reclamation activities, removal of hazardous material and abatement of asbestos, lead paint and other toxic material. This also includes recovery, sorting, and/or storage services in relation to waste.
Waste treatment and	The treatment or disposal of waste (including hazardous waste), including

disposal services	the operation of landfills, combustors, incinerators, compost dumps and other treatment facilities (except sewage treatment facilities), and waste transfer stations.

APPENDIX A – WASTE ASSESSMENT DECEMBER 2021

Tauranga City Council

Waste Assessment

December 2021

Document status

Job #	Version	Approving Director	Date
2577	Draft	Alice Grace	23/03/2021

Contents

1 Introduction

This Waste Assessment has been prepared by Tauranga City Council (TCC) to assess our progress against our existing vision, goals, objectives, targets, and actions from the 2016-2022 Waste Management and Minimisation Plan (WMMP). The previous WMMP was adopted in August 2016 as the second WMMP prepared by TCC, with the first being a joint WMMP with the WBOPDC adopted in 2010.

This Waste Assessment helps TCC identify what we have done and continue to do, and the impact these actions made on diverting waste to landfill. As well as the actions we did not undertake or targets we did not achieve from the 2016 WMMP.

This is a requirement of the Waste Minimisation Act 2008 (WMA)[21], which gives councils the responsibility to promote effective and efficient waste management and minimisation within their district. With reviews of the WMMP to occur at least every six years.

This Waste Assessment sets out:

a. a description of the collection, recycling, recovery, treatment, and disposal services provided within Tauranga; and

b. a forecast of future demands for collection, recycling, recovery, treatment, and disposal services within Tauranga; and

c. a statement of options available to meet the forecast demands of our City with an assessment of the suitability of each option; and

d. a statement of Tauranga's intended role in meeting the forecast demands; and

e. a statement of Tauranga's proposals for meeting the forecast demands, including proposals for new or replacement infrastructure; and

f. a statement about the extent to which the proposals will —

   i. ensure that public health is adequately protected:

   ii. promote effective and efficient waste management and minimisation.

1.1 Document and accuracy

This document was prepared using information gathered from a variety of sources including data managed by TCC, the most recent SWAP data (Composition of Solid Waste in Tauranga City March 2020 Report, Waste Not Consulting), historical SWAP data, the 2016 WMMP and the TCC waste contracts.

Although every effort has been made to provide a complete and accurate assessment, in some cases data has been estimated or there are data gaps. Details regarding any limiting factors in preparing the Waste Assessment that are deemed to have materially impacted on the completeness or accuracy of the data, forecasts, estimates or options assessment have been noted where appropriate.

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

- the significance of the information
- the costs of, and difficulty in, obtaining the information
- the extent of TCC's resources

[21] Section 50 of the Waste Management Act.

- the possibility TCC may be directed under the Health Act 1956 to provide the services referred to in that Act

2 The waste situation in Tauranga

The following section contains information regarding:

- TCC provided waste services and facilities
- Non-council provided services and facilities
- Waste quantities and composition
- Identified waste issues
- Forecast of future demand for waste services and facilities

2.1 TCC provided Waste Services and Activities

2.1.1 TCC Household Kerbside Collection Service

On the 1st July 2021, TCC introduced a household kerbside collection service that is funded using a targeted rate of $210.00 per household. In the first year, the new kerbside service comprises of:

- a fortnightly kerbside rubbish collection (140L rubbish bin)
- a fortnightly kerbside recycling collection (45L glass crate + 240L recycling bin) and
- a weekly kerbside food scraps collection (23L food scraps bin).

Households can also choose to have a fortnightly or 4-weekly garden waste collection service (240L bin) added for an additional annual fee of $95.00 or $60.00, respectively.

In 2022, households can select a low, standard (existing), or high waste service by selecting their bin size for rubbish and recycling collections – with smaller bins costing less than larger bins. The glass crate and food scraps collection remain the same. The targeted rates for the 2022-2023 year have been set as follows:

- Low waste service (140L rubbish bin + 140L recycling bin) = $190.00 per household
- Standard waste service (140L rubbish bin + 240L recycling bin) = $220.00 per household
- High waste service (240L rubbish bin + 240L recycling bin) = $320.00 per household

The household kerbside collection contract is undertaken by EnviroWaste Services Limited on behalf of TCC.

2.1.2 Waste Education and Minimisation Programmes

TCC has a strong focus on waste minimisation education and provide and/or fund a number of programmes that are offered to various sectors of their communities, including businesses. These include:

- Resource Wise Schools: This is a free programme available for all educational establishments within Tauranga e.g. early childhood centres, and primary, intermediate, and high schools. Schools first attend a Resource Wise Schools – Introductory Workshop, which will help schools determine whether the programme is the right fit for their school. They are then supported with an annual waste audit to determine the waste being sent to landfill and potential diversion opportunities. This includes additional training and resources, where appropriate, to establish worm farms, compost

bins, signage, presentations to staff and students and nappy trials.

- Resource Wise Business: A free initiative for Tauranga organisations who want help to reduce what they send to landfill over a four-year period. TCC work with participants to help them manage their resources sustainably, providing waste audits, a detailed waste report, tailored actions and support to engage the organisation in behaviour change. Each participant is provided an annual waste audits and a detailed action plan specifically designed for the business. Alongside additional resources and training, where necessary.
- Resource Wise Events: TCC supports event managers and organisers to consider waste minimisation when they are planning and implementing waste management systems at events. Resources are available (e.g. flags, bin covers for public rubbish bins and bin lids) for event organisers to help reduce the environmental impacts of their event.
- Resource Wise Community Fund: This is a is an annual contestable fund of $75,000 that is open to anyone in the community who can apply to deliver projects that minimise waste to landfill, and/or achieve actions identified in the WMMP. Grants range from $1,500 to $20,000. The priority outcomes for the 2021/2022 funding round included:
    - reduction of waste to landfill from commercial and industrial businesses
    - support for households using the upcoming kerbside waste collection service
    - achievement of specific actions within the WMMP
    - enhancement of council's Resource Wise® behaviour change programmes
- Paper4trees: Is a programme that TCC funds, which provides free classroom and office recycling bins for students and staff to recycle paper and cardboard. Schools and preschools are then rewarded with native trees for their paper and cardboard recycling efforts. The programme is managed and delivered by the Environmental Education for Resource Sustainability Trust.
- Para Kore: TCC sponsors the Para Kore program that is designed to support marae to reduce waste with a goal for all marae to be zero waste. The Para Kore team provide waste advisors to work with marae to set up recycling and composting systems.
- Reusable Nappy Trials in Early Childhood Centres (ECE): As part of the Resource Wise Schools program, ECEs can participate in a TCC-funded reusable nappy trial.
- TCC supports community groups that want to arrange their own litter clean ups by providing bags and gloves for these clean-ups and can arrange free disposal for the collected waste.
- TCC participates in the joint Tauranga stream and estuary clean-up programme alongside the Bay of Plenty Regional Council, which is currently sponsored by Downer NZ. The programme provides an opportunity for local schools to actively give back to their local community and for students to learn about pollution, sustainability, reducing/reusing/recycling waste, and help to clear rubbish from their local environment.
- Worm Composting Workshops: TCC provide Worm Composting Workshops throughout the year. The two-hour workshops are subsidised by Council and cost $34.50 per household with the participants receiving their own worm farm bin, worms, lime, and compost. The Workshop teaches participants how to use their worm farm, and how to harvest the compost to use on gardens as a beneficial plant food and soil conditioner.
- Waste Free Parenting Workshops: TCC provides funding for workshops that introduce tips and ideas to support households minimise waste at home. It includes a free $100 goodie bag of waste

minimisation products.

- Food Lovers Master Class; TCC funds educational masterclasses where participants receive exciting and inspirational advice around ways to reduce your food waste. Topics include meal planning, smart shopping, smart storage, plus learn about the first in first out approach/ method, what is the difference between use by and best before and when all else fails the last resort options. It also includes $100 worth of goodies.
- Love Food, Hate Waste: TCC supports the national campaign that aims to inspire and enable people to waste less food.
- TCC provides collection bins at several Council facilities for the collection of unwanted mobile handsets and accessories. These are sent to RE:Mobile, a recycling programme that provides New Zealanders with a thoughtful and environmentally friendly disposal option. Part of the profits go to charity.
- TCC also supports various other community organisations that undertake waste minimisation and management activities. This includes Good Neighbour Food Rescue and Lightfoot.

2.1.3 Litter Control and Enforcement

Enforcement, and some litter control, is managed by TCC. This includes cleaning up illegal dumping and abandoned vehicles throughout the City. Costs are recovered, where possible.

2.1.4 Public Litter Bins

TCC manage the installation, maintenance and emptying of public litter bins within the scope of solid waste services.

2.1.5 City-wide Cleaning

TCC engages contractors to carry out targeted cleaning across Tauranga. These services include street sweeping, footpath cleaning and sump clearing.

2.2 TCC provided Waste Facilities

2.2.1 Transfer Stations / Resource Recovery Parks

TCC own land and buildings associated with two solid waste transfer station sites at Te Maunga (Truman Lane, Mount Maunganui) and Maleme Street (Greerton) that provide waste consolidation, processing and disposal services. The land and buildings are leased to EnviroWaste who manage the operations on these two sites.

Te Maunga Transfer Station is proposed to be upgraded to take the form of a 'Resource Recovery Park'. The upgrade will support the population growth in the area and provide residents and industry with numerous options to recover multiple waste streams from landfill, such as untreated timber, organics, concrete, tyres, e-waste, hazardous waste, construction, and demolition waste. The Te Maunga Resource Recovery Park[22] will also contain a comprehensive public drop-off recycling centre, community recovery centre and workshop. Construction on the Resource Recovery Park is expected to commence in late-2022 and be completed by 2025.

Maleme Street Transfer Station is also being upgraded to ensure good management from both an

[22] The Waste Assessment refers individually to the Te Maunga Transfer Station as the Te Maunga Resource Recovery Park hereafter.

operational and Health and Safety perspective. However, this facility was closed to the public on 2nd August 2021 after a review identified that options to reduce contamination from flooding and stormwater were uncertain and therefore not seen as financially viable when compared with the opportunity to invest in extensive waste diversion at Te Maunga. Maleme Street Transfer Station will remain open for municipal consolidated waste (transported in front-end loaders or rear entry compactors) and construction and demolition waste only, to commercial account holders.

2.2.2 Materials Recovery Facility

TCC also lease land at Te Maunga to Waste Management Limited, who operate the MRF to sort paper and cardboard, plastics, tin and aluminium cans. The MRF currently processes all of Tauranga and Western Bay of Plenty household kerbside material (excluding glass). The MRF also currently processes kerbside material from other areas where Waste Management Limited has council contracts, including from Gisborne, Whakatane, and Kawerau.

Additional to the kerbside volumes processed at the MRF, Waste Management Limited also have incoming material from their commercial customers that they service themselves. The majority of this incoming material is paper and cardboard.

Waste Management's lease agreement to operate the MRF on TCC owned land expires in 2026.

TCC is also proposing to upgrade the MRF with a new optical sorter to reduce contamination within its recyclable waste streams. This is because the current contamination rate within the MRF is approximately 33%.

2.2.3 Garden Waste Composting and Wood Waste

Garden waste is processed into compost by way of windrow composting at a facility in Te Maunga. This garden waste is largely sourced from Tauranga and Western Bay of Plenty as well as outlying areas such as Taupo and Cambridge. Envirowaste currently lease the composting facility from TCC.

Untreated timber is also processed at Te Maunga into wood chip by way of shredding. The reprocessed products are garden mulch, motorway roadside mulch, animal bedding and woodchip for playgrounds. Goodwood have been operating at Te Maunga for approximately two years. Goodwood's lease agreement with TCC expired in February 2020, with Envirowaste picking up the lease in July 2021. Envirowaste currently sub-lease the wood waste recovery facility to Goodwood.

2.2.4 Landfills

There are no open Class 1 landfill disposal facilities[23] located in Tauranga. However, TCC own two closed Class 1 landfills at Te Maunga and Cambridge Road Park. These are actively managed and monitored in accordance with resource consent conditions.

TCC operates a Class 2 landfill at the southern end of the Tauranga Airport. The site currently accepts construction and demolition waste, namely concrete, asphalt, soil, and sand, with the material being used to raise the ground surface and increase the capping depths on a closed landfill. The historic closed landfill is known to have been used as a landfill from the 1960s through to the 1980s, but the exact material disposed of are unknown. However, it is likely that the material disposed at the site was initially general rubbish with waste from a nearby fertiliser works (sulphur dross) and wood waste/bark from Tauranga Port. The existing resource consents for the cleanfill disposal were granted in 2008 and expire on the 22nd

[23] A Class 1 landfill is a site that accepts municipal solid waste and generally also accepts C&D waste, some industrial wastes and contaminated soils. Class 1 landfills often use managed fill and clean fill materials they accept, as daily cover. As defined in the *Technical Guidelines for Disposal to Land Waste Management Institute New Zealand (WasteMINZ), August 2018*.

February 2023.

A Class 1 landfill, known as the Ross Green Landfill, is located on McPhail Road in the Western Bay of Plenty District. It is understood that this site accepts a range of waste streams, but primarily consisting of contaminated materials and soils, construction and demolition waste, and other cleanfill. The site is not consented to accept general household waste.

2.2.5 Wastewater treatment residuals - Biosolids

Wastewater from households in Tauranga City is sent to TCC's two Wastewater treatment plants located at Chapel Street and Te Maunga. Processing of the wastewater results in a by-product commonly referred to as 'biosolids'.

Historically, all biosolids from the Chapel Street wastewater treatment plant have been sent directly to landfill. At the Te Maunga wastewater treatment plant, the disposal of biosolids has been into an onsite sludge pond with only periodic dredging before disposal to landfill occurring. In April 2019 this process ceased and all biosolids were disposed of to landfill due to updated resource consent requirements.

As a result of the increased discharge of biosolids to landfill, in October 2019, TCC began a trial at the Te Maunga wastewater treatment plant to divert biosolids to a private sector vermicomposting facility in Kawerau. In the first nine months of the vermicomposting trial, 12% of all biosolids were successfully diverted from landfill. This increased to 66% of all biosolids in 2020/21. TCC continues to investigate options to divert biosolids from landfill to achieve a 100% diversion rate.

2.3 Non-council provided Services and Facilities

Currently, the majority of waste services in Tauranga are provided by the private sector and funded through user charges. Services include:

- Household and commercial rubbish collections
- Household and commercial mixed recycling collections (excluding glass and plastics 3-7)
- Household and commercial garden waste collections and
- Hazardous waste services, including agricultural hazardous waste.

While there have historically been private sector landfill and cleanfill operations occurring within Tauranga, there are currently none operating within its City boundaries. TCC is aware of cleanfill operations in the wider Bay of Plenty region that some waste is sent directly to.

We are also aware that there are a significant number of community-led resource recovery facilities throughout Tauranga. This includes charity shops and organisations that collect waste streams to reuse, repurpose or upcycle into other products, such as Precious Plastics and the ReMaker Space. In addition, TCC supports food rescue organisations like Good Neighbour and the Tauranga Food Bank. All of these activities contribute substantially to the diversion of organic waste to landfill, while having a host of other environmental, social, and economic benefits.

2.4 Waste quantities and composition

It is important for TCC to understand the quantity and composition of waste coming through its facilities and services so that it can identify opportunities to reduce waste to landfill and measure progress against targeted improvements.

However, this does not accurately record the complete picture of waste in Tauranga and the wider Bay of

Plenty Region. This is because there are multiple waste streams that are diverted prior to reaching TCC facilities. This includes an unknown volume of waste that has historically, and still is currently, being sent to private landfills and cleanfills. In addition, there is an unknown volume of waste disposed of in farm dumps and within other private operations that TCC are not aware of. This is one aspect TCC is investigating capturing as part of the 2022 WMMP.

Since 2003, TCC has been recording the quantities of waste and diverted material that they have handled. However, the following analysis largely focuses on data from 1st July 2015 until 30th June 2021, which factors in the projects and goals of the Action Plan from the 2016 WMMP. A brief summary of the data from July to December 2021 for the new household kerbside service is also included at section 3.4.7 of this Waste Assessment. This additional data will help identify trends and changes since the new service was introduced.

While total volumes have been included, we have also converted to 'per capita' figures to allow for comparison between years regardless of population growth. This is necessary as the population in Tauranga City has increased 10.4% in the last five years to nearly 145,000 people. With an additional 13,000 residents expected to be living in approximately 8,000 more dwellings by 2028. By 2043, it's expected that there will be an additional 60,000 residents living in approximately 23,000 more dwellings within our city when compared to today. As a result, it is expected that total volumes of waste have also increased, which puts pressure on all city infrastructure, including waste collection services, diversion, and disposal facilities.

2.4.1 Total Waste Discarded

The known total volume of waste, including all recycling, organic waste, and general waste, that was discarded and processed through TCC facilities has steadily increased over the six years from 143,314 tonnes in 2015/16 to 180,711 tonnes in 2020/21. This is the equivalent of each person disposing of 1093 kilograms and 1226 kilograms, respectively, every single year. An increase of 12%.

It is noted that these volumes do not include cleanfill waste or other waste that was not processed at a TCC facility. For cleanfill, we understand that this is the equivalent of at least another 60,000 tonnes of waste per annum that is processed at facilities not operated by TCC. Which is up to an additional 407 kilograms per person. In addition, there is an unknown volume of waste that is sent directly to landfills, cleanfills, and farm dumps. This additional volume could be significant.

Figure 4: Known total waste discarded per year excluding cleanfill

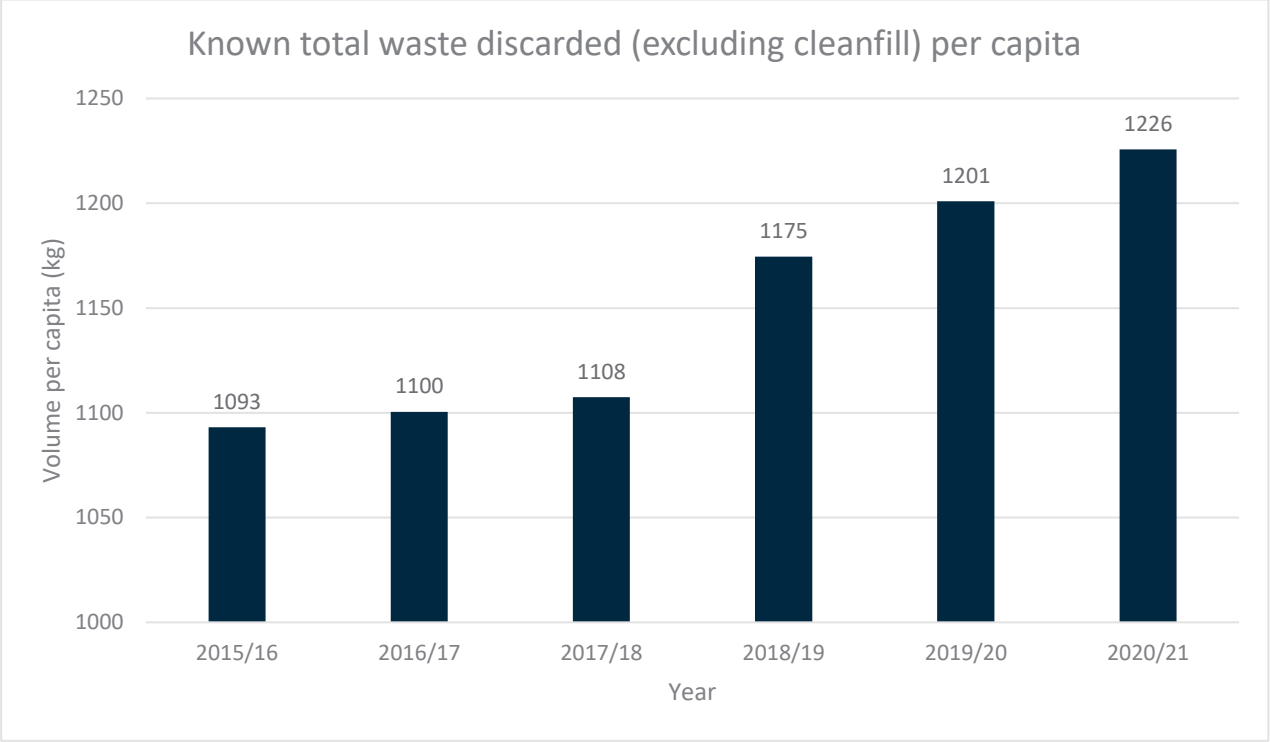


Figure 5: Known total waste discarded per capita per year (excluding cleanfill)

2.4.2 Waste to Landfill

The preceding section 3.4.1 illustrated the known total volume of waste generated and processed at the TCC facilities. The following section summarises the known total volume of waste sent to landfill.

The total waste to landfill processed through the TCC facilities has increased by 26% from approximately 126,000 tonnes in 2015/16 to over 149,000 tonnes in 2020/21.

In terms of total waste to landfill (excluding biosolids) per capita, as shown in Figure 3, over the last six years there has been an increase of approximately 44 kg per capita per annum. From 936 kg per capita in 2015/16 to 980 kg per capita in 2020/21.

These figures reflect that per capita, we're both generating and disposing of more waste to landfill than ever. As a City, Tauranga is also significantly higher than the national average for waste to landfill, which is approximately 750 kg per capita per annum.

The data includes residual waste collected by private household kerbside services, as well as general domestic and commercial waste disposed at both Te Maunga and Maleme Street transfer stations that was not diverted from landfill. This includes commercial construction and demolition waste and cleanfill. Figure 3 also illustrates total waste excluding and including biosolids delivered direct from TCC's wastewater treatment plants to landfill.

As previously noted, there is an unknown volume of waste that has historically, and still is currently, being sent to landfill. In addition, there is an unknown volume of waste disposed of in farm dumps and within other private operations that TCC are now aware of. This is one aspect TCC is investigating capturing as part of the 2022 WMMP.

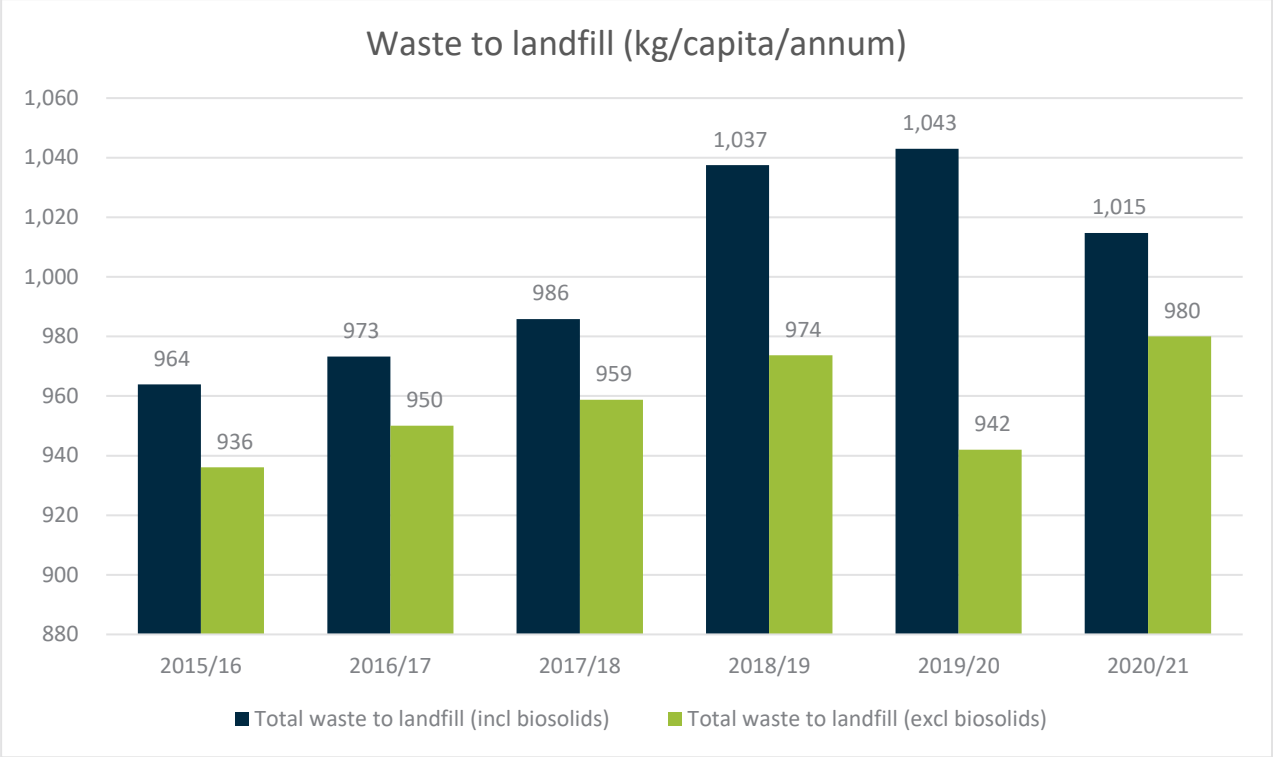


Figure 6: Waste to landfill per capita per year

2.4.3 Household Kerbside Waste

Figure 4 shows the composition of private household kerbside collection services for general waste, recycling, and garden waste (whereas Figure 3 above shows all waste to landfill). Note that TCC did not provide household kerbside services during this period.

Since 2015/2016 there was a decrease in kerbside waste to landfill from 200kg per capita to 192kg per capita in 2017/2018 before increasing back up to 199kg per capita in 2020/21. This reflects the baseline of 200kg of waste to landfill per capita, which TCC is requiring to be met as part of its rates-funded household kerbside contract targets.

The amount of kerbside recycled waste was steady before increasing significantly due to the introduction of TCC's glass collection service in 2018. This largely reflects the additional recoverable material that is not contaminated from broken glass.

The total amount of kerbside garden waste has remained steady, only increasing by 2kg from 13kg per capita per annum to 15kg per capita per annum.

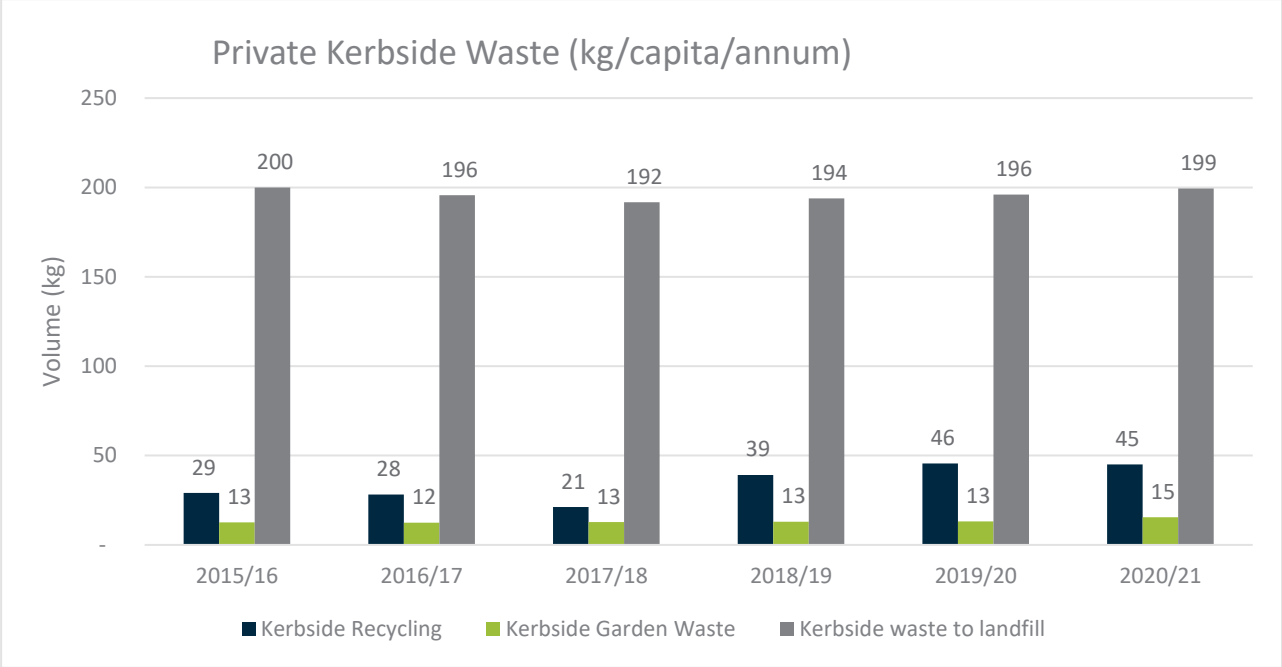


Figure 7: Composition of privately collected kerbside waste per capita per year

2.4.4 Kerbside and Transfer Station Recycling

Figure 5 provides more detail on waste being recycled in Tauranga. The recycled waste amounts include private household kerbside mixed recyclable collections, TCC kerbside glass collections, as well as mixed recyclables and glass dropped off at the Transfer Stations.

The total amount of recycled materials per capita was decreasing before an increase in the last two years that can be attributed to TCC introducing a rates-funded kerbside glass collection in October 2018.

The split between private household kerbside recycling collections and individuals dropping recycling to the Transfer Station has been relatively even, with approximately 55% - 60% collected at the kerbside.

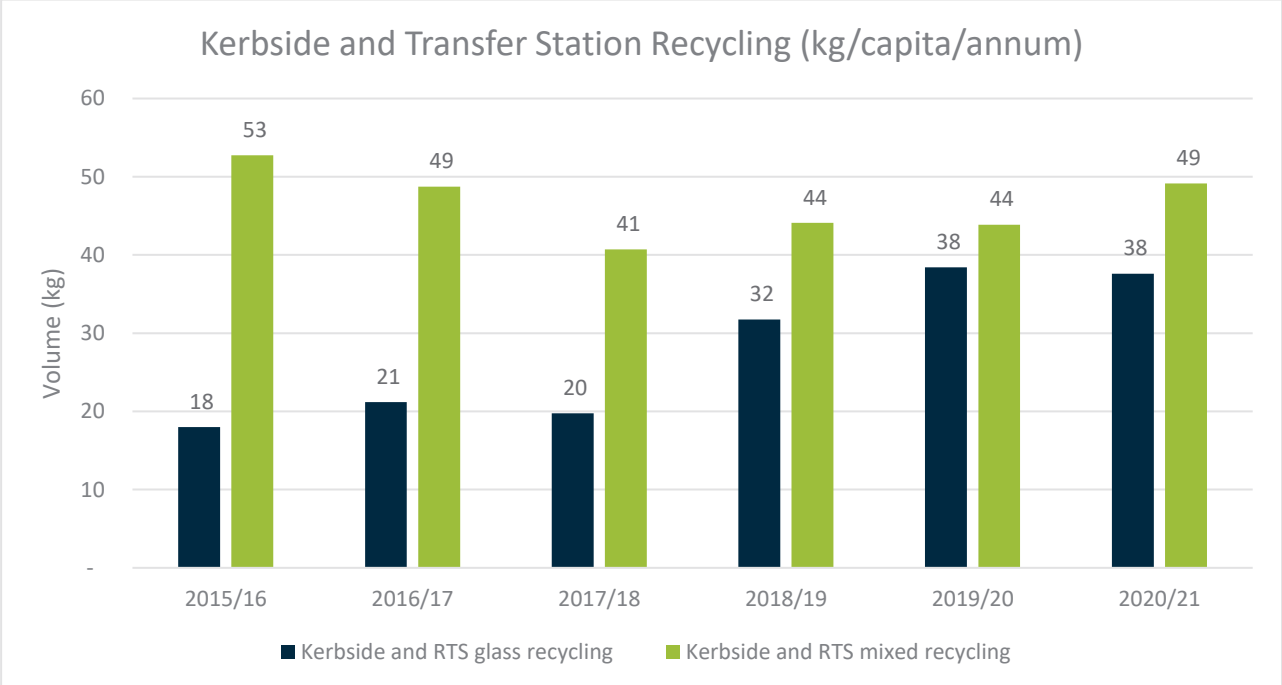


Figure 8: Kerbside and Transfer Station recycled material per capita per year

2.4.5 Kerbside and Transfer Station Garden Waste

Garden waste amounts are measured from privately collected kerbside garden waste as well as garden waste dropped off at the Transfer Station. Figure 6 shows that the amount of garden waste collected has remained largely the same over the last five years. Although there has been a small drop in the volume dropped at the transfer station, with a subsequent small increase in the volume disposed at the kerbside in 2020/21.

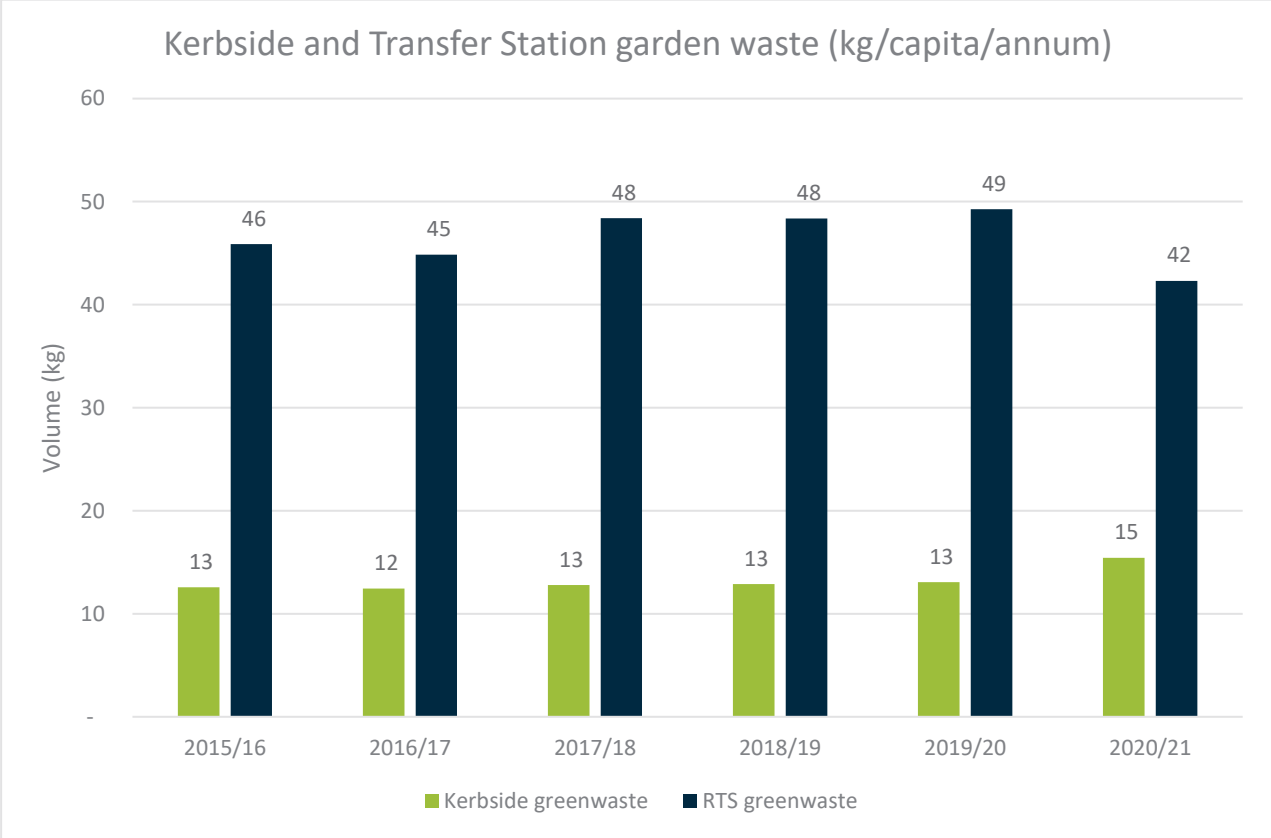


Figure 9: Kerbside and Transfer Station garden waste material per capita per year

2.4.6 Disposal of Biosolids

As previously set out in section 3.2.5 of this Waste Assessment, historically, all biosolids from the Chapel Street wastewater treatment plant have been sent directly to landfill. While biosolids at the Te Maunga wastewater treatment plant were disposed into an onsite sludge pond with only periodic dredging before disposal to landfill occurring. In April 2019 this process ceased and all biosolids were disposed of to landfill due to updated resource consent requirements. This resulted in a significant increase in the volume of biosolids going directly to landfill. To alleviate this change, in October 2019, TCC began a trial at the Te Maunga wastewater treatment plant to divert biosolids to a private vermicomposting facility in Kawerau.

Figure 7 shows the growth in Biosolids to landfill over the last five years. In the first nine months of the vermicomposting trial (2019/20), 12% of all biosolids or 13kg per capita of biosolids, was successfully diverted from landfill. In 2020/21, 66% of all biosolids were able to be diverted to the vermicomposting trial, which increased the volume to 66kg per capita per annum.

The vermicomposting facility is waiting for approval from the Bay of Plenty Regional Council to expand their consents. If these consents are granted, TCC is seeking to send up to 100% of biosolids generated to the vermicomposting operation. TCC is also investigating other biosolid diversion opportunities in the event that the private vermicomposting facility is unable to obtain the necessary resource consents.

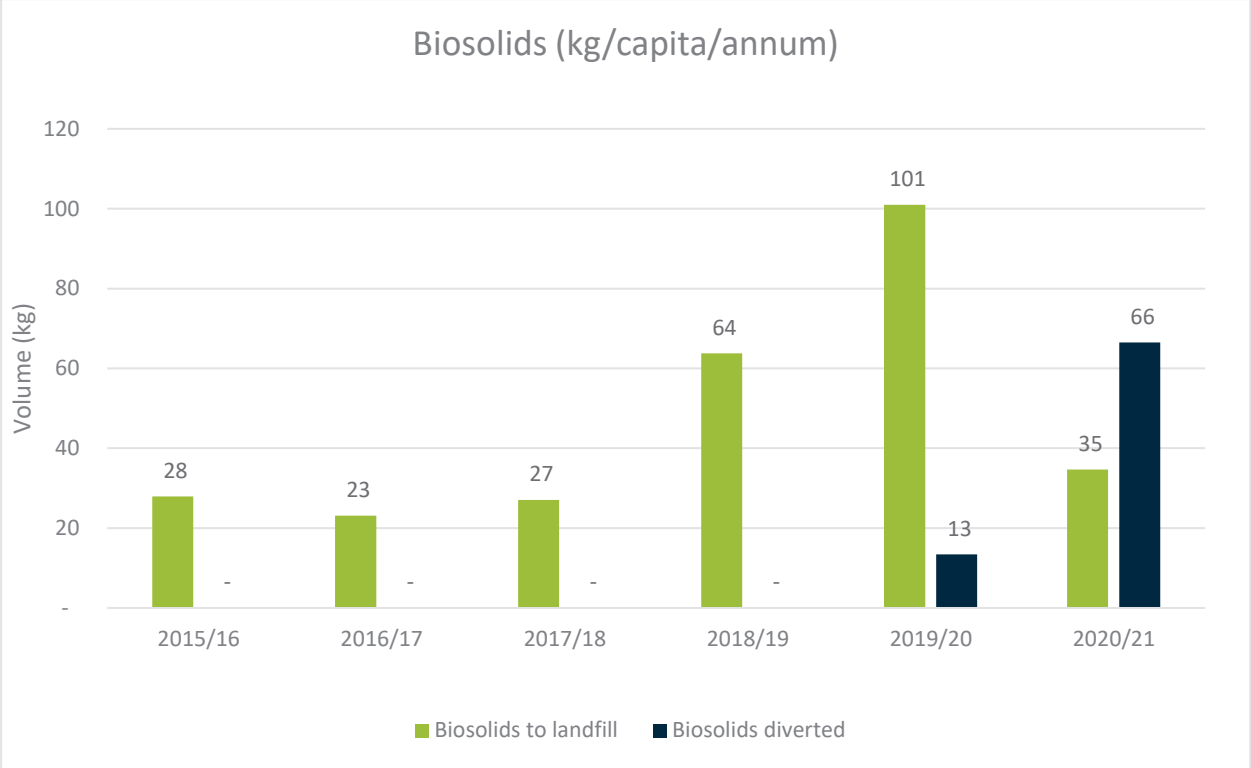


Figure 10: Biosolids material per capita per year

2.4.7 SWAP Results

Over the last five years, SWAP surveys of the composition of waste to landfill from the TCC Transfer Stations and household kerbside services have been completed, as follows:

1) Baseline surveys between October 2016 and August 2017 consisting of:
    a) Four six-day visual surveys of the composition of waste being disposed of at Maleme Street and Te Maunga Transfer Stations; and
    b) Eight five-day sort-and-weigh audits of kerbside rubbish.
2) First follow-up kerbside waste audits conducted in May and June 2018.
3) First follow-up visual surveys of Transfer Stations undertaken in October 2018.
4) Second follow-up kerbside waste audits conducted in December 2019 and March 2020.
5) Second follow-up visual surveys of Transfer Stations undertaken in February and March 2020.
6) Third follow-up kerbside rubbish audits conducted in October and November 2020.
7) Third follow-up visual surveys of Transfer Stations undertaken in September and November 2020.
8) Baseline household kerbside rubbish bin audit undertaken in December 2021.

The studies comprised a sort-and-weigh audit of the composition of household kerbside collected rubbish and a visual survey of general waste being disposed of at the TCC Transfer Stations. The methodologies for the audit and survey were based on those recommended by the Ministry for the Environment's Solid Waste Analysis Protocol (SWAP).

The reason for the high frequency of SWAP surveys at was to ensure that TCC has robust data for measuring whether there is any seasonal or temporal variation. This enables easy comparisons when undertaking future SWAP surveys, particularly for understanding changes after the Council household kerbside collection service was rolled out in July 2021.

The following analysis uses data obtained from the SWAP audit report prepared by Waste Not Consulting in November 2020. We have focused on the composition of the waste being disposed of at the Transfer Stations as well as within household kerbside bins, pre and post July 2021, to consider the impact of the new rates-funded kerbside service.

It is noted that these figures do not include any waste, including construction and demolition waste, that is sent directly to landfill or cleanfill sites that does not pass through either of the TCC Transfer Stations. In addition, due to these TCC Transfer Stations being open to the public and private contractors that operate from outside the City itself, it is recognised that the total volumes of waste processed through these facilities includes a portion of waste generated outside of Tauranga.

Activity source of waste to landfill via TCC Transfer Stations

For the purposes of this analysis, 'waste to landfill' is considered to be all waste passing through both TCC Transfer Stations that is subsequently disposed of at a Class 1 landfill.

The average proportion of the activity sources from both Transfer Stations is shown in Table 1.

Table 1 - Activity source of all waste loads from Transfer Stations to Landfill - Oct/Nov 2020

Activity sources of all waste loads at Maleme St and Te Maunga Transfer Stations - Oct/Nov 2020	% of loads surveyed	% of total weight	Tonnes/week
Construction & demolition waste from a building	24%	23%	508 T/week
Industrial / commercial / institutional sources	21%	30%	658 T/week
Landscaping and earthworks – waste from landscaping activity, garden maintenance, and site works, both domestic and commercial	9%	5%	115 T/week
Residential – all waste originating from residential premises other than that covered by one of the other, more specific classifications (includes drop-offs of bagged domestic waste)	35%	8%	169 T/week
Subtotal - general waste	**89%**	**66%**	**1,451 T/week**
Kerbside rubbish – waste collected from residential and commercial premises by private and Council kerbside rubbish collections	11%	34%	751 T/week
TOTAL	**100%**	**100%**	**2,202 T/week**

When comparing those figures to previous years, as depicted in Figure 8 below, it demonstrates that there is an ongoing trend that waste volumes continue to rise.

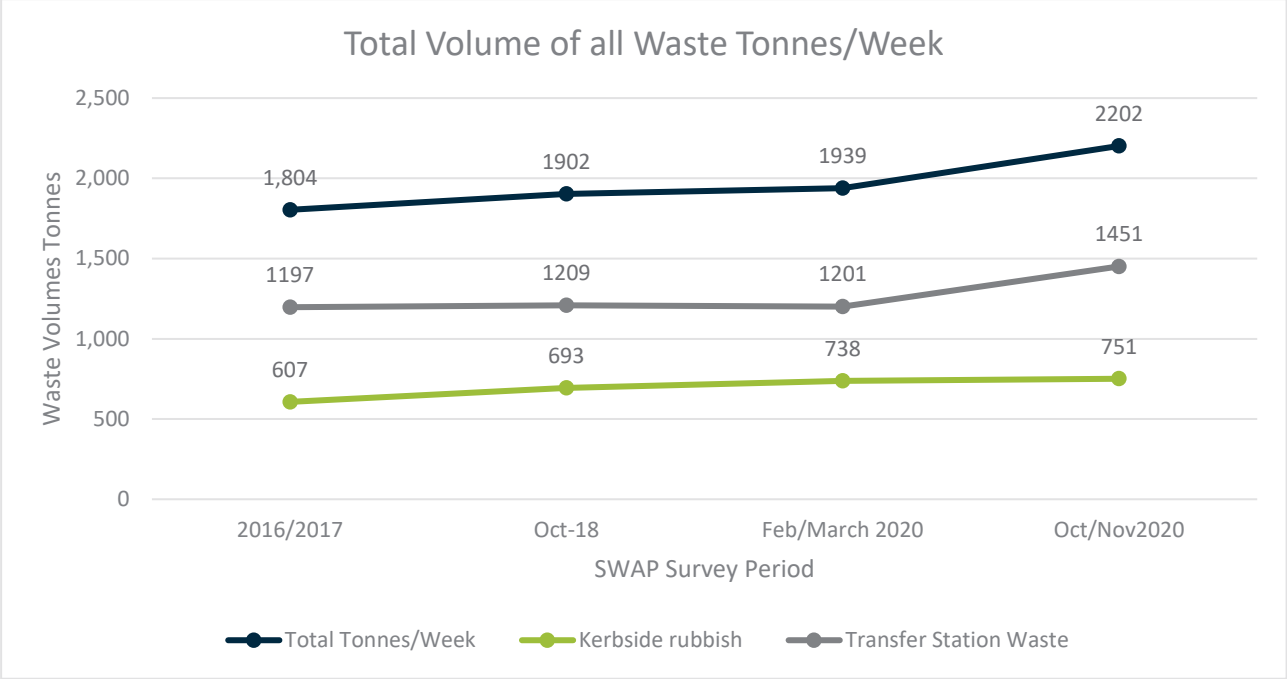


Figure 11: SWAP Audit data for waste to landfill per week in tonnes

Transfer Station Waste Composition

Table 2 provides a summary of all of the waste streams (composition) that was sent to landfill from both TCC Transfer Stations in October and November 2020. The data includes general waste excluding kerbside rubbish (both Council and private), and overall waste to landfill, which includes kerbside rubbish. This separation of data provides a comparison of the impact of kerbside waste services. An additional comparison before and after the introduction of household kerbside service from July 2021 is provided in Table 5.

When excluding kerbside waste, it is clear that timber was the largest component of general waste (28.2% or 409 tonnes/week), while organics is only 12.8% or 186 tonnes/week. However, when including kerbside waste, organics becomes the largest component at 26.8% or 589 tonnes, while timber is 19.2% or 329 tonnes/week. This presents opportunities to target specific waste streams and sources such as organic material generated by households, and construction and demolition waste generated by commercial businesses.

Table 2: Secondary composition of all waste sent to landfill via TCC Transfer Stations – SWAP November 2020

All waste to landfill from TCC Transfer Stations - Oct/Nov 2020		**General waste (excludes kerbside rubbish)**		**Overall waste (includes kerbside rubbish)**	
		% of total	**Tonnes per week**	**% of total**	**Tonnes per week**
Paper	Recyclable	2.1%	31 T/week	3.8%	83 T/week
	Cardboard	4.4%	64 T/week	3.2%	70 T/week
	Non-recyclable	1.4%	21 T/week	1.4%	32 T/week
	Subtotal	**8.0%**	**116 T/week**	**8.4%**	**185 T/week**
Plastics	Recyclable	0.4%	6 T/week	1.0%	23 T/week

	Non-recyclable	11.1%	161 T/week	10.1%	223 T/week
	Subtotal	**11.5%**	**167 T/week**	**11.1%**	**245 T/week**
Organics	Kitchen waste	4.5%	65 T/week	14.4%	316 T/week
	Compostable greenwaste	4.4%	64 T/week	8.4%	185 T/week
	Non-compostable greenwaste	2.6%	37 T/week	2.3%	51 T/week
	Organics other	1.3%	19 T/week	1.7%	38 T/week
	Subtotal	**12.8%**	**186 T/week**	**26.8%**	**589 T/week**
Ferrous metals	Primarily ferrous	1.5%	22 T/week	1.3%	29 T/week
	Steel other	1.9%	28 T/week	1.6%	34 T/week
	Subtotal	**3.4%**	**50 T/week**	**2.9%**	**63 T/week**
Non-ferrous metals		**0.6%**	**8 T/week**	**0.7%**	**16 T/week**
Glass	Recyclable	0.8%	11 T/week	1.5%	33 T/week
	Glass other	1.2%	18 T/week	1.0%	21 T/week
	Subtotal	**2.0%**	**29 T/week**	**2.4%**	**54 T/week**
Textiles	Clothing/textiles	2.2%	32 T/week	2.1%	45 T/week
	Multi-material/other	6.3%	92 T/week	4.7%	103 T/week
	Subtotal	**8.5%**	**124 T/week**	**6.7%**	**148 T/week**
Sanitary paper		**2.7%**	**40 T/week**	**4.8%**	**105 T/week**
Rubble	Cleanfill	4.5%	66 T/week	3.0%	66 T/week
	New plasterboard	4.6%	67 T/week	3.0%	67 T/week
	Other	11.2%	162 T/week	8.9%	196 T/week
	Subtotal	**20.3%**	**295 T/week**	**14.9%**	**329 T/week**
Timber	Reusable	1.6%	23 T/week	1.0%	23 T/week
	Unpainted & untreated	4.9%	71 T/week	3.2%	71 T/week
	Non-recoverable	21.8%	316 T/week	14.9%	329 T/week
	Subtotal	**28.2%**	**409 T/week**	**19.2%**	**422 T/week**
Rubber		**1.3%**	**19 T/week**	**1.0%**	**21 T/week**
Potentially hazardous		**0.7%**	**9 T/week**	**1.1%**	**25 T/week**
TOTAL		**100.0%**	**1,451 T/week**	**100.0%**	**2,202 T/week**

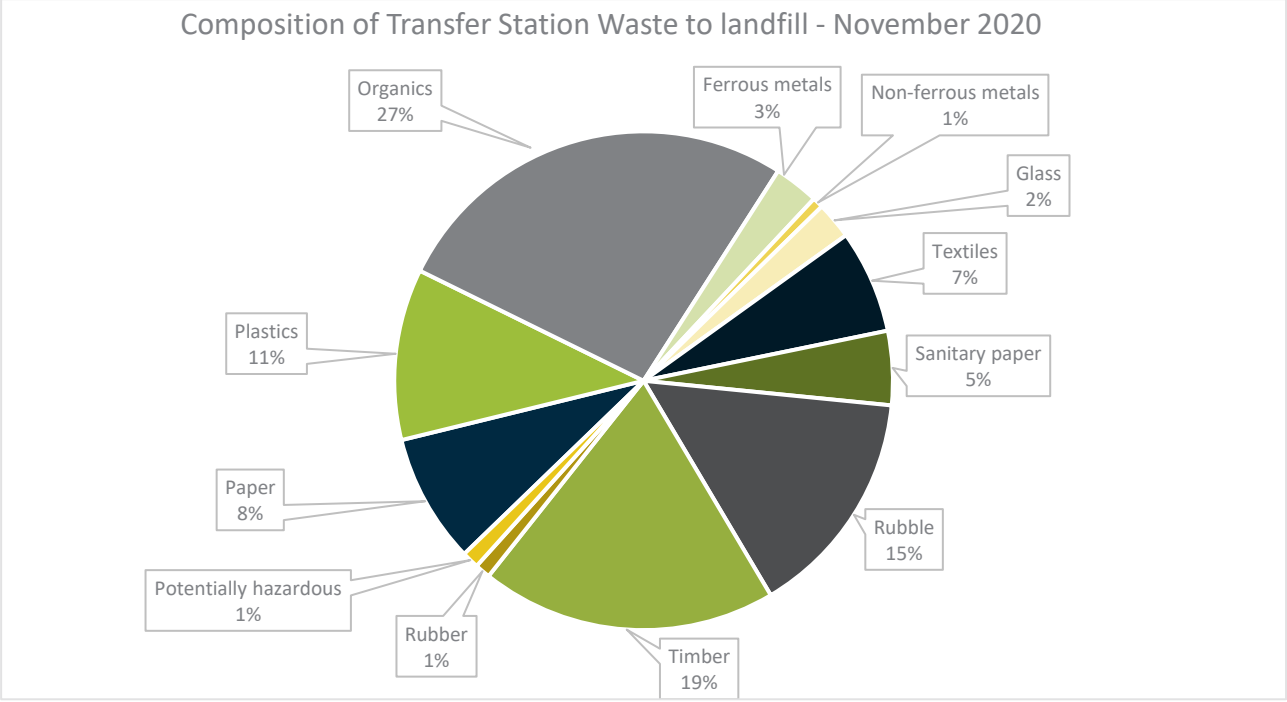


Figure 12: Composition of TCC Transfer Station waste to landfill including kerbside waste (SWAP November 2020)

Waste volumes and composition from household kerbside collection since 1 July 2021

The following information provides a summary of the volumes and composition of waste, including recycling, glass, food waste, and garden waste, collected since TCC introduced the household kerbside collection service on the 1st July 2021.

As shown in Table 3, there has been a significant increase in the volumes of waste volumes across all waste streams collected at the kerbside since July 2021 to December 2021. The highest increase is associated with garden waste volumes, which have increased by 213%. This is also reflected in the number of households that are now receiving the 'opt-in' garden waste service. Which increased from 8,800 households on 1st July 2021 to 11,921 households on 31st December 2021.

Overall, the total volume of waste across all waste streams collected from the household kerbside service has increased by 51% from 2,312 tonnes in the month of July 2021 to 3,484 tonnes in the month of December 2021. In our view, this reflects the changes in behaviour as more households adopt the use of all of the bins.

In terms of the volume of waste diverted from landfill each month, there is an average diversion rate of 52%. This is relatively evenly split between the four divertible waste streams of glass, general recycling (paper, cardboard, plastics #1, #2 and #5, and aluminium cans), food waste, and garden waste.

Table 3: Household kerbside waste volumes (tonnes per month)

Waste Streams (tonnes / month)	Jul-21	Aug-21[24]	Sep-21	Oct-21	Nov-21	Dec-21	% Increase since July 2021
Refuse	1,008	1,532	1,499	1,305	1,338	1,524	51%

[24] In August 2021, Tauranga and the rest of New Zealand Aotearoa was in Alert Level 4 for two weeks due to COVID-19. This meant that only rubbish, recycling, and garden waste bins were collected. While glass and food waste were not. Tauranga then dropped to Level 3 at the end of August 2021 and normal household kerbside services resumed, with all bins being collected again. This resulted in a corresponding drop in diverted materials for August 2021.

Glass	322	198	463	357	376	461	43%
Food Waste	316	203	379	343	350	371	17%
Recyclables	502	251	382	468	504	614	22%
Garden Waste	164	237	323	400	528	514	213%
Total Waste Volume	2,312	2,421	3,046	2,873	3,096	3,484	51%

In December 2021, a SWAP Audit of the household kerbside rubbish bins was also undertaken. This was commissioned to understand the composition of household rubbish bins so that we could monitor the effects of the introduction of the services. Namely, whether the introduction of food waste, recycling, and optional garden waste bins would divert waste from landfill. A follow up audit is scheduled for February 2022.

The results of the December 2021 audit of the secondary composition of household kerbside rubbish bins are presented in Table 4. In summary, organic material, primarily food waste, was the largest single component of the kerbside rubbish, comprising 39.8% of the total weight, or 3.33 kg per average wheelie bin. Plastics was the second largest component, (14.0%), and sanitary paper (11.7%), was the third largest component.

Table 4: Secondary composition of household kerbside rubbish bins

TCC Kerbside rubbish - December 2021		% of total weight	Average weight	Tonnes per week
Paper	Recyclable	6.10%	0.51 kg	18 T/week
	Non-recyclable	3.00%	0.25 kg	9 T/week
	Subtotal	**9.10%**	**0.76 kg**	**28 T/week**
Plastics	# 1,2,5 containers	2.30%	0.19 kg	7 T/week
	# 3,4,6,7 containers	0.90%	0.08 kg	3 T/week
	Plastic bags & film	6.70%	0.56 kg	20 T/week
	Other non-recyclable	4.10%	0.34 kg	12 T/week
	Subtotal	**14.00%**	**1.17 kg**	**43 T/week**
Organics	Kitchen waste	25.90%	2.16 kg	78 T/week
	Greenwaste	9.50%	0.79 kg	29 T/week
	Organic other	4.50%	0.38 kg	14 T/week
	Subtotal	**39.80%**	**3.33 kg**	**121 T/week**
Ferrous metals	Steel cans	0.90%	0.08 kg	3 T/week
	Steel other	2.60%	0.22 kg	8 T/week

	Subtotal	**3.50%**	**0.29 kg**	**11 T/week**
Non-ferrous metals	Aluminium cans	0.60%	0.05 kg	2 T/week
	Non-ferrous other	1.00%	0.08 kg	3 T/week
	Subtotal	**1.60%**	**0.14 kg**	**5 T/week**
Glass	Bottles/jars	2.50%	0.21 kg	8 T/week
	Glass other	1.10%	0.09 kg	3 T/week
	Subtotal	**3.60%**	**0.30 kg**	**11 T/week**
Textiles	Clothing/textiles	2.60%	0.22 kg	8 T/week
	Textile other	2.30%	0.19 kg	7 T/week
	Subtotal	**4.90%**	**0.41 kg**	**15 T/week**
Sanitary paper		**11.70%**	**0.98 kg**	**35 T/week**
Rubble		**5.50%**	**0.46 kg**	**17 T/week**
Timber		**3.30%**	**0.27 kg**	**10 T/week**
Rubber		**1.90%**	**0.16 kg**	**6 T/week**
Potentially hazardous	Household	0.80%	0.07 kg	2 T/week
	Other	0.30%	0.02 kg	1 T/week
	Subtotal	**1.10%**	**0.09 kg**	**3 T/week**
TOTAL		**100.00%**	**8.36 kg**	**303 T/week**

In the following table, the diversion potential of kerbside rubbish in December 2021 is compared to a kerbside rubbish SWAP Audit from October/November 2020[25]. The 2020 audits took place after TCC introduced the kerbside glass collection service in 2018, but before the introduction of the new, rates-funded kerbside rubbish, food waste, garden waste, and recycling bins in July 2021.

In percentage terms, the proportions of recyclable materials in kerbside rubbish in December 2021 were similar to those in Oct/Nov 2020, but the weights are significantly less. In our view, this means that the introduction of the kerbside service has reduced the volume of waste going to landfill that could be diverted. But there is still plenty of work to do.

For example, based on weight, the proportion of compostable materials decreased 31%, from 51.2% in Oct/Nov 2020 to 35.3% in December 2021. The proportion of kitchen waste decreased 23% and greenwaste 47%.

[25] The tonnes per week of kerbside rubbish for 2020 are based on the results of the visual surveys at Maleme St and Te Maunga transfer stations in September and November 2020. The results of those surveys included an average weekly tonnage of kerbside rubbish (751 tonnes per week) but did not differentiate between kerbside rubbish from TCC or WBOPDC. Therefore, a tonnage of kerbside rubbish has been assigned to TCC, based on the relative populations of each area. At the time of the audit, TCC had 73% of the residents in the combined areas, which equates to 547 tonnes of kerbside rubbish per week. The December 2021 tonnage in the table is based on the average weekly tonnage of the TCC kerbside rubbish collection for October and November 2021, which was 303 tonnes per week.

In terms of tonnages of kerbside rubbish disposed of to landfill, recyclable materials decreased 51%, from 77 tonnes per week in Oct/Nov 2020 to38 tonnes per week in December 2021. The tonnage of kitchen waste decreased 57%, from 183 to 78 tonnes per week, and greenwaste decreased 71%, from 98 to 29 tonnes per week.

Table 5: Comparison of October/November 2020 to December 2021 of diversion potential of kerbside rubbish

TCC Kerbside rubbish diversion potential	% of weight		Tonnes per week		% change in tonnes per week
	Oct/Nov 2020	Dec 2021	Oct/Nov 2020	Dec 2021	
Recyclable materials					
Paper Recyclable	7.70%	6.10%	42	18	-57%
Plastics Recyclable containers	2.20%	2.30%	12	7	-42%
Steel cans	0.90%	0.90%	5	3	-40%
Aluminium cans	0.50%	0.60%	3	2	-33%
Glass bottles/jars	2.90%	2.50%	16	8	-50%
Subtotal - Proportion of kerbside rubbish that was recyclable	**14.10%**	**12.40%**	**78**	**38**	**-51%**
Compostable materials					
Organics Kitchen waste	33.40%	25.90%	183	78	-57%
Organics Greenwaste	17.80%	9.50%	98	29	-70%
Subtotal - Proportion of kerbside rubbish that was compostable	**51.20%**	**35.30%**	**281**	**107**	-62%
Total divertible	**65.30%**	**47.70%**	**359**	**145**	**-60%**
Non-divertible	**34.70%**	**52.30%**	**190**	**159**	**-16%**
TOTAL WASTE	**100%**	**100%**	**549**	**304**	**-45%**

3 Review of the 2016 WMMP

The 2016 WMMP was the second WMMP adopted by TCC, with the first being a joint WMMP with the WBOPDC adopted in 2010. While TCC and WBOPDC prepared separate WMMP in 2016, they prepared a joint sub-regional Waste Assessment and agreed on a joint sub-regional vision of “Minimising waste to

landfill".

At that time, the most significant issue facing both Councils was that combined, Tauranga and the Western Bay annually sent close to 90,000 tonnes of waste to landfill. Of the waste sent to landfill, it was calculated that around 65% of kerbside rubbish collected from households could be recycled or composted[26]. This issue was exacerbated by the fact that most of the kerbside services were provided by private companies that had a service agreement directly with the householder. The only exception to this was the user-pays kerbside rubbish bag collection service provided by Council. While that arrangement has some advantages, such as flexibility and choice in the services used such as bin type, collection type and collection frequency; the downside is that Council had little ability to address the key issue of that too much waste was going to landfill.

The WMMP also highlighted the following issues:

- Some of the recycling that is collected ends up going to landfill because of the way that it is collected
- The way services are provided at the moment mean that as a city, our services are relatively expensive due to eight different private companies collecting the same materials and investing in the same infrastructure to do so
- There is minimal diversion of construction and demolition waste, such as concrete, glass, and timber, as there is limited facilities and infrastructure available locally, and
- The Transfer Stations at Maleme Street and Te Maunga are at, or near, capacity most of the time and there are risks involved in the way those sites operated.

The vision was supported by goals, objectives and targets that the Council believed the community could work towards. An Action Plan was developed to address the issues in line with the vision, goals and objectives, with successful implementation of the actions expected to reduce waste going to landfill, and possibly reduce the overall community cost of kerbside collections and disposal charges while retaining valuable organic material in the sub-region.

Within the 2016 WMMP, TCC set only one specific target to increase the total volume of waste diverted from landfill from households, businesses, and other organisations. The targets were expressed as the amount of waste sent to landfill per household or per capita as this was deemed easy to measure over time as it takes account of growth over time. However, the targets were based on a number of assumptions and projections. In addition, due to way data is collected by TCC and also the lack of data from the private sector, we are unable to accurately compare the targets to the data available today. Overall, it is fair to say though that the targets were aspirational, and the rates of diversion are yet to be achieved.

It is proposed to utilise more specific and measurable targets in the 2022 WMMP.

A summary of our progress against the 2016 WMMP goals, objectives, and actions follows.

[26] Tauranga City Council and Western Bay of Plenty District Council Joint Waste Assessment, 2016.

Table 15: Progress against 2016 WMMP Goals and Objectives

2016 Goals and Objectives	Progress against the Goals and Objectives
Goal 1: Reduce and recover more waste Objective: To reduce the total quantity of waste to landfill, with an emphasis on wastes that create the most harm. Objective: To increase diversion of waste that is currently disposed of to landfill for reuse, recovery or recycling.	Over the past six years, there has been significant wins in reducing and recovering waste. This includes introducing the rates funded household kerbside service to tackle the almost 70% of Tauranga's household waste that was being sent to landfill that could have been recycled or composted instead. The new service provides a dedicated recycling, food scraps, glass recycling, and rubbish collection for the same cost as using one and a half rubbish bags a week today. Successfully, in the first 4 weeks of the new service being introduced, we are now recycling or composting over 50% of what we're collecting from kerbside. Our trials to divert biosolids to a vermicomposting facility has also reduced the volumes going to landfill by up to 66% in the last year. However, we recognise that more work in this area is required to identify potential diversion opportunities so that we can turn our waste into a valuable product with an end-market. TCC is also in the process of re-designing the Te Maunga transfer station into a Resource Recovery Park that will have a significant focus on recovering and recycling construction and demolition waste. As well as supporting a community-led recovery centre on the site that will reuse, repurpose and repair unwanted products. We also recognise there is a lot more to do. Especially as the overall annual volumes of waste in Tauranga, excluding biosolids, going to landfill has increased by approximately 44kg per capita (prior to the new kerbside service rollout in July 2021).
Goal 2: Apply the latest proven and cost effective waste management and minimisation approaches Objective: To investigate and where appropriate develop partnership, joint working and co-operation across the private and community	

sectors as well as territorial and regional councils, including shared services. Objective: To investigate the use of available recovery and treatment technologies and service methodologies and apply these where appropriate. Objective: To engage the community and provide information, education and resources to support community actions. Objective: To use Council influence to advocate for increased or mandatory producer responsibility. Objective: To work with local businesses and organisations to achieve waste reduction at a local level.	
Goal 3: To collect information to enable informed decision making Objective: To take actions that will improve information on waste and recovered material activities in the districts, including both Council-contracted and private sector activities. Objective: To work towards aligned data collection and reporting systems across the districts, region and nationally.	In the 2016 WMMP, TCC identified that there was a lack of waste data that was being collected, which is a common theme across Aotearoa New Zealand. In turn, this makes it difficult to monitor and target specific waste streams, particularly those that cause the most harm to the environment and the community. As a result, TCC undertook a number of SWAP surveys each year to gather data and identify where our waste is coming from and where it is going. This assisted TCC in making the informed decision to introduce the kerbside service and will support our reporting moving forward. TCC is also working collaboratively across Aotearoa New Zealand with other Councils and MfE to develop a comprehensive Waste Operator Licensing and Data System that will be used across the Bay of Plenty and Waikato regions to support collective and individual management of waste operators and associated waste data.
Goal 4: To create benefit for our community Objective: To work with service providers to identify efficiencies while maintaining and/or improving service levels. Objective: To consider both short and long term cost impacts of all actions across the community including economic costs and benefits.	During the preparation of the 2016 WMMP, TCC recognised that as a community we could be doing a better job of diverting waste from landfills. In our view, due to the way waste was being collected across the city, we were not efficiently collecting waste. This came at a cost to our community and our environment. By introducing the rates funded household kerbside service, we believe we have improved the waste service levels, reduced the cost for the majority of households, and are having significant environmental benefits by now diverting over 50% of all waste being collected at the kerbside.

Objective: To consider the environmental impact of all options and ensure that the overall environmental impact is taken into account in decision making. Objective: To consider the public health impacts of all waste management options and seek to choose options which effectively protect human health.	TCC has also continued to deliver a number of behaviour change programmes and initiatives across the City. This includes the Resource Wise programme for schools, businesses, and homes, where we directly reached over 13,000 individuals. This continues to be supported with the assistance of MfE funding through the waste levy, as well as countless hours from passionate volunteers and staff. Through the Resource Wise Community Fund, TCC has also financially supported initiatives that have targeted food scraps, garden waste, clothing and other textiles, construction and demolition waste, mixed recycling (paper, cardboard, and glass), and hard to recycle items such as batteries, plastic bottle tops, and mobile phones.

The following table assesses our progress against the 2016 WMMP Action Plan that outlined a six-year programme to achieve the vision to "minimise waste to landfill".

Table 16: Progress against 2016 WMMP Action Plan

2016 WMMP Action and Description	Progress against the Actions:
R1 Waste management and minimisation bylaw a) Investigate and extend existing Waste Management and Minimisation Bylaw in accordance with Section 56 of the WMA to support implementation of this WMMP. Regulatory tools that could be included have been listed below: • operator and facility licensing, • data collection provisions, • events waste management, • recycling service standards, • Container standards, • Material controls, • cleanfill management, and • requirements for properties and developments.	Completed (in part) and ongoing. TCC reviewed the Bylaw in 2016 to ensure it was fit for purpose and again in 2020 to ensure that the rates funded kerbside service would be covered. The reviews have established a process for waste service providers to be licensed, which is renewed annually. TCC is currently reviewing the Bylaw to determine what additional amendments need to be made. Public consultation on the new Bylaw is expected in March 2022.

R2 Enforcement a) Take active enforcement action against offences such as littering and illegal dumping.	Completed and ongoing. TCC has been working on collecting data and establishing better record keeping of littering and illegal dumping activities. TCC is also monitoring the changes proposed by the New Zealand Government through the new legislation that will address the difficulties in taking enforcement action. Work in this space is ongoing with any changes to be implemented through the new Bylaw.
R3 Health and Safety a) Actively ensure that all health and safety requirements are implemented, monitored and maintained with regards to all programs, services and facilities.	Completed and ongoing. TCC undertakes active monitoring of contracts and leases through site inspections and regular meetings. Any issues are logged via a health and safety register and addressed, as required.
M1 Waste stream auditing a) Engage a suitably qualified and experienced waste auditor to carry out a SWAP audit on the kerbside, landfill (transfer stations) and clean fill waste streams (and other processing facilities as deemed relevant) following the SWAP methodology in collaboration with private waste companies. b) Schedule kerbside rubbish audits in accordance with the following (or as close to these dates depending on the availability of the consultant undertaking the surveys): • Spring 2016 (Oct) • Summer 2017 (Jan) • Autumn 2017 (Apr) • Winter 2017 (July) • Undertake an annual survey on a 4-year seasonal cycle, i.e. 2018: July 2019: October 2020: January 2021: April etc.	Completed and ongoing. As discussed in section 3.4.6 of this Waste Assessment, a number of SWAP surveys have been undertaken from kerbside rubbish bags/bins and transfer stations in accordance with this action. Additional SWAP surveys are planned for December 2021 and at least annually thereafter.
M2 Ongoing monitoring	Completed and ongoing.

a) Increase monitoring to provide more information in certain areas such as commercial waste composition; cleanfill, C&D waste etc. b) Initiate and oversee research, studies and audits; and feed results into future iterations of waste assessments and WMMPs.	TCC has implemented a number of studies and surveys, including through its SWAP surveys, to monitor the composition of waste. This data is being utilised as part of this Waste Assessment to identify the ongoing issues that need to be addressed by the WMMP. Notably, the studies have identified that construction and demolition waste is a significant issue, and this is a key reason for upgrading the Te Maunga Resource Recovery Park with a dedicated construction and demolition waste processing facility. Additionally, with the commencement of the new kerbside contract TCC has also employed a contamination officer to inspect kerbside recycling and food waste bins.
M3 Reporting protocols and systems a) Gathering accurate and consistent information on how services are performing is essential for monitoring progress towards targets and planning for future demand. The Council will either develop OR adopt a national model for monitoring and reporting. Key areas that require monitoring include: level of service, compliance with legislative requirements and regulations and, waste reduction and diversion. b) Data will be gathered through community satisfaction surveys, council records (KPIs etc.), biannual SWAPs and through the provisions of the waste bylaw.	Completed and ongoing. KPIs have been incorporated into education programmes to enable better reporting and monitoring. SWAP audits completed, allowing data analysis on waste streams. TCC is currently working with other Bay of Plenty and Waikato Councils to implement a consistent approach to waste operator licensing and data recording. This is in consultation with MfE. This work is ongoing, with an RFP expected in late-2021. A challenge for the next WMMP is to get good data from the commercial sector identifying key waste areas that can be targeted for additional waste minimisation.
M4 Interactive website a) Initiate the development and ongoing management of a multi-functional interactive website to aid the dissemination of info and solutions for the community	Completed. It was determined that no interactive website would be developed. However, upgrades to the TCC website have been undertaken. This includes a bin collection day map and tool to let customers know when their bins are collected next. TCC has also introduced a new mobile App for the new kerbside service that provides updates and notifications for when your bins will next be collected. This App also allows issues to be logged by customers.
M5 Research and evaluation	Completed and ongoing.

a) Undertake baseline research to better understand community values, attitudes and behaviour in regard to waste, in order to support programme development, social marketing campaigns and ongoing evaluation of the effectiveness of council interventions.	These community surveys were completed in December 2016. Additional annual surveys are expected to form an action of the next WMMP.
M6 Evaluation of programs a) Undertake regular evaluation of the programs that form part of the overarching waste management and minimisation programme (including all education programmes).	Completed and ongoing. TCC has undertaken reviews of all of its programmes, with a particular focus on the Resource Wise programmes. Ongoing monitoring and reviews are undertaken each year to confirm they are still fit for purpose and whether changes are required.
M7 WMMP a) Prepare a new waste assessment, gather the data for next WMMP and undertake any required Bylaw review.	Completed and ongoing. The proposed WMMP and Bylaw are expected to be notified for public consultation in March 2022.
CS1 Investigate and consider solutions for rubbish, recycling and garden and food waste collections to increase diversion from landfill a) Investigate and consider solutions that will increase the diversion of waste from landfill (including, but not limited to, the provision of a full kerbside collection service funded through rates, increased regulation via the bylaw, etc. Council staff will engage with private collectors and the wider community as a part of this action. b) Implement the preferred kerbside solution. c) Investigate alternate collection provisions for households that are not suitable for the kerbside collection system introduced such as multi-unit developments, retirement villages, etc. d) Investigate provision of this to businesses, schools, pre-schools, etc.	Completed and ongoing. Following investigations and reports, TCC has adopted and introduced a Council-led rubbish, mixed recycling and organic waste collection service for all households in July 2021. This includes multi-unit developments, some of which have bespoke services to accommodate their residents and specific site layouts. TCC intends to research and investigate the provision of a Council-led service for businesses, schools and preschools etc as part of the next WMMP.
CS2 Public place collections a) Review the provision of public place litter bins, including the possible introduction of public place recycling, cigarette butt bins,	Completed and ongoing.

dog bag bins, pack in/pack out approaches for parks and recreation areas, etc.	TCC has reviewed its public place litter bin service. As a result, TCC made the following changes: • Combined recycling and rubbish stations trialled and then established throughout the City, including at freedom camping locations. • Established a project to collect data and monitor on problem areas. • Prepared guidelines for provision of public place bins. • Working with McLarens Falls on recycling station to be installed onsite for visitors and campers. • Engaged with TCC Animal Services about dog poo bags to determine how and where this service needs to be provided.
CS3 Manage and reduce litter and illegal dumping a) Ensure that consistent and appropriate loose litter collections are undertaken. b) Review current litter campaigns to determine contribution to waste minimisation and develop an anti-litter / illegal dumping campaign. c) Gather baseline data on current illegal dumping and litter incidences and look at targeted behaviour change.	Completed and ongoing. Data has been captured and the project plan developed in 2018/19 with implementation ongoing. TCC is also monitoring the changes proposed by the New Zealand Government through the new legislation that will address the difficulties in taking enforcement action. Work in this space is ongoing with any changes to be implemented through the new Bylaw.
CS4 Waste brokering a) Investigate the provision of a waste broker service for businesses b) If deemed appropriate, implement the waste broker service.	Completed. TCC investigate implementing a waste brokering service but decided not to proceed.
CS5 Glass collections a) Engage with private waste collectors to implement the most appropriate glass collection for the City, including but not limited to considering:	Completed and ongoing. The glass collection service started on the 1 October 2018. This has been incorporated into the new kerbside collection contract.

• access and amenity • public safety • health and safety of workers • diversion potential	
CS6 Continue to provide and optimize waste services provided to keep the City clean, reduce / eliminate public health risks and protect the environment a) Continue to provide and optimise contracts and leases that deliver waste services to the community for cleanliness, public health and environmental protection including but not limited to: • street cleaning • sump cleaning • footpath cleaning • public litter bins • litter and illegal dumping collection • charity waivers • abandoned vehicles • closed landfill monitoring and maintenance (via consent).	Completed and ongoing. TCC continues to undertake these services and monitor their effectiveness annually.
CE1 Continue and extend existing communication and education programme a) Continue and extend exiting communication and education program. Including the below: • Schools • Businesses • Households	Completed and ongoing. TCC undertakes a number of programmes to target all sectors of the community in Tauranga. This includes the Resource Wise programmes for schools, businesses and households. Each of these programmes have achieved significant waste diversion targets. TCC continues to support national campaigns and liaise with other Councils to undertake behaviour change initiatives.

• Events • Sports clubs • Food rescue • Food waste prevention • And support of any other campaigns that align with the WMMP. Consider covering additional topics such as prevention of littering, illegal dumping, smoking related litter, abandoned cars, etc. b) Investigate how other cities both nationally and internationally address issues through behaviour change programs (utilizing methods such as community based social marketing). c) Re-brand existing communication and education programme to ensure consistent messaging and brand for waste management and minimisation (e.g. 'Resource Wise': schools, businesses events, homes etc.).	TCC believes that behaviour change and education programmes provides one of the key opportunities to divert waste from landfill.
CE2 Support introduction of new services a) Develop a communication and education program to support the introduction of any new rates-funded services provided by the Council.	Completed and ongoing. TCC undertook a comprehensive education and communication program before and during the new kerbside service rollout. New campaigns are planned in the future to target ongoing or new issues that arise, such as contamination of recycling bins with soft plastics.
CE3 Targeted community communication and education a) Extend existing communication programme to focus on additional target audiences such as retired/ elderly, culturally and linguistically diverse or those that may struggle with a more direct waste cost (i.e. if CS1 (a) and (b) are introduced) and less-engaged sectors of the community.	Completed and ongoing. TCC continues to investigate and review communication plans to target specific sectors of our community to engage with hard to reach audiences.
CE4 Communications plan a) Develop and implement a communications plan for the WMMP.	Completed and ongoing.

b) Coordinate with other BOP Councils / Industry groups to standardise communication and education materials. c) Consistent and planned promotion of available education programmes to the community (e.g. newsletters, local media, Facebook etc.).	Communication plans have been developed for individual programmes and projects. These are reviewed periodically to address any short-comings.
CE5 Promote good practice a) Publicise businesses and organisations that are proven to provide reputable reuse and recovery services and products on Council's website and elsewhere. b) Investigate establishing projects that demonstrate best practice waste management and minimisation. c) Acknowledge and celebrate those in the community that demonstrate best practice waste management and minimisation.	Completed and ongoing. TCC promotes business and organisations that are awarded with Resource Wise certificates. TCC also celebrates schools and businesses through videos to new participants to showcase high achievers.
CE6 Events waste management a) Develop a consistent framework to support and encourage better events waste management; and continue to provide information and agreements that support events waste management (such as the vendor packaging framework).	Completed and ongoing. TCC has undertaken a significant amount of work in the event space to ensure that events are operated as close to waste free events as possible. This includes providing funding, guidelines, training and resources. This includes requiring all events on TCC land to provide Waste Management Plans to divert waste from landfill.
CE7 Incentives a) Investigate the use of incentives to enhance the update or use of a service or facility that improves material diversion from landfill.	Ongoing. TCC has researched incentives for minimising waste to landfill and have incorporated these into the new kerbside service and promotes them through education programmes.
CE8 Social media a) Develop and implement a social media campaign for behaviour change programs on a case-by-case basis.	Completed and ongoing. TCC has implemented and continues to implement targeted social media campaigns, including before and during the kerbside rollout. This includes videos and posts across Facebook.
RRP1 Maintain Resource Recovery Park services	Completed and ongoing.

a) Continue to provide services for a wide range of materials at the Resource Recovery Park including household hazardous waste.	TCC has maintained public access to both the Te Maunga and Maleme Street transfer stations until August 2021, at which time the Maleme Street transfer station closed to the public. These transfer stations collect a range of waste streams, including hard to recycle items and a hazardous waste store. TCC is currently designing an updated comprehensive resource recovery park at Te Maunga. This will extend the waste streams available for public drop-off and will allow flexibility so that new waste streams can be collected in the future. Particular as new diversion opportunities are recognised nationally, such as a Container Deposit Scheme.
RRP2 Upgrade Resource Recovery Park a) Investigate plan and upgrade the Resource Recovery Park to offer improved waste management and minimisation e.g. accommodating additional material streams on a case by case basis (e.g. construction and demolition materials, hazardous waste etc.), waste minimisation centre or learning hub, reuse centre etc.	Completed and ongoing. TCC has periodically upgraded its transfer stations to improve waste collection and diversion opportunities. TCC is now designing an upgraded resource recovery park at Te Maunga, with physical works expected to commence in late 2022. This will focus on construction and demolition waste with a new processing facility to divert at least 10,000 tonnes of waste annually from landfill by 2025. TCC continues to liaise with other business, organisations, Councils, and MfE to identify other opportunities to expand its waste management and minimisation opportunities.
RRP3 Alternative disposal / treatment a) Work cooperatively with other councils in the region and neighbouring regions to explore options for alternative disposal/treatment of residual waste.	Completed and ongoing. TCC continues to liaise with other business, organisations, Councils, and MfE to identify other opportunities to expand its waste disposal and treatment opportunities. This includes, but is not limited to, converting waste to energy, and end markets for plastics, timber, concrete, and other construction and demolition materials.
B1 Biosolids a) Investigate alternate recovery, reuse and discharge options for biosolids.	Completed and ongoing. TCC implemented a trial to dispose of biosolids to a private sector vermicomposting facility in Kawerau. In the first nine months of the vermicomposting trial, 12% of all biosolids were successfully diverted from landfill. This increased to 66% of all biosolids in 2020/21. TCC continues to investigate options to divert biosolids from landfill to achieve a 100% diversion rate.
LC1 Public sector collaboration	Completed and ongoing.

a) Seek to expand collaborative arrangement further afield with other councils (regional and local) in the region and neighbouring regions.	TCC engages and collaborates regularly with multiple sector groups, Councils and Central Government organisations across Aotearoa New Zealand to undertake waste management and minimisation activities.
LC2 Private sector collaboration a) Continue to collaborate with private sector and community groups to investigate opportunities to enhance economic development through waste minimisation (e.g. charity shops, social enterprise for reuse/recycling such as e-waste etc.).	Completed and ongoing. TCC engages and collaborates regularly with private sector and community groups to support and undertake waste management and minimisation activities. This includes providing funding and support for new initiatives that will divert hard to recycle waste streams. As part of the upgrade of the Te Maunga resource recovery park, TCC intends to establish a community-led recovery centre. This will include space for community waste management and minimisation activities, such as a “repair café” and upcycle store to divert waste from landfill.
LC3 Collaboration on services and/or facilities a) Identify potential for economies of scale through partnership and cooperation where any new services and/or facilities are planned.	Completed and ongoing. TCC engages regularly with local Councils, including across the Bay of Plenty, Waikato and Auckland, to develop partnerships. Work continues in this space as new opportunities arise.
LC4 Internal collaboration a) Work with other council departments on: • specific waste issues such as incorporating waste and recycling into property and development; • events waste management; • ensure that waste man and min is incorporated into any other appropriate council docs, plans and strategies; • enforcement of waste bylaw; • asset management; and • growth management.	Completed and ongoing. The sustainability and waste team works with other TCC departments, as required, to focus on waste management and minimisation activities throughout the City.

LC5 Community collaboration a) Investigate and develop initiatives that will support local enterprise, community and mana whenua involvement. b) Establish a grants scheme for community groups. c) Work with secondary and tertiary education to support development of innovative solutions.	Completed and ongoing. TCC established the Resource Wise Community Fund in 2018 that provides funding of up to $50,000 annually to businesses and organisations that promote waste management and minimisation activities. TCC intends to increase the funding to $80,000 annually in 2022. TCC provides additional ad hoc support and funding to other organisations when opportunities are presented.
LC6 Lobby central government a) Lobby central government for improved waste management and minimisation tools such as product stewardship (e.g. tyres, batteries, C&D waste, e-waste, container deposit systems); improved legislation, additional industry regulation. b) Advocate amendments to the Waste Minimisation Act to give industry the same waste minimisation obligations as local authorities. There is currently no legal imperative for industry to reduce waste to landfill. Amending the WMA to give industry the same responsibilities as local authorities would significantly reduce the amount of waste sent to landfill.	Completed and ongoing. TCC continues to consult with the waste industry, Councils and the New Zealand Government on policies, strategies, legislation and activities that affect waste management and minimisation. This includes but is not limited to, single-use plastics, a Container Deposit Scheme, the Waste Levy, the Emissions Reduction Plan, Waste Strategy, Waste Minimisation Act and Litter Act, mandatory product stewardship schemes.
LC7 Corporate responsibility a) Ensure that Council is managing its own waste as effectively as possible (e.g. carry out a waste audit, identify potential actions and targets, promote good practice in Council contracts, incorporate into staff inductions etc.).	Completed and ongoing. TCC undertook a waste audit in May 2017. At that time, it was determined that an internal Waste Policy was not required. This decision is being reviewed. TCC continues to investigate and implement a number of internal initiatives, including recycling stations, internal workshops for staff on worm farming, Plastic Free July campaign, a review of its procurement policy.

4 Forecast of Future Demand

In order to effectively plan for the future, we are required to forecast the future demands for waste collection, recycling, recovery, treatment, and disposal services[27] for Tauranga. Ultimately, we need to ensure that any new WMMP caters for the demand anticipated in the future.

The future demands for waste collection, recycling, recovery, treatment, and disposal services are influenced by a wide range of factors. As we have seen from COVID-19 in the last 18 months, some of these factors are unknown or immeasurable. This means that predicting future demand has inherent uncertainties. Nevertheless, this section of the Waste Assessment considers the direct and indirect effects of the following factors:

- Population growth
- Consumption patterns and behaviour changes
- Economic activity
- Impact of waste flows from other districts
- Natural disaster events
- National and local policy and legislation

4.1.1 Population Growth projection

As the population increases there is a corresponding increase in the associated demand for waste collection, recycling, recovery, treatment, and disposal services. If not planned for, this can result in significant pressure and adverse environmental consequences as additional waste is sent to landfill.

Figure 10 sets out TCC's adopted growth projections[28] compared with Statistics New Zealand low, medium and high population projections. In summary, the projected population and dwelling increases for Tauranga City are significant with an additional 13,000 residents expected to be living in approximately 8,000 more dwellings by 2028. By 2043, it's expected that there will be an additional 60,000 residents living in approximately 23,000 more dwellings within our city when compared to today.

[27] Section 51(1) of the WMA 2008
[28] Tauranga City Population and Dwelling Projection Review 2021, prepared by TCC, dated April 2021.

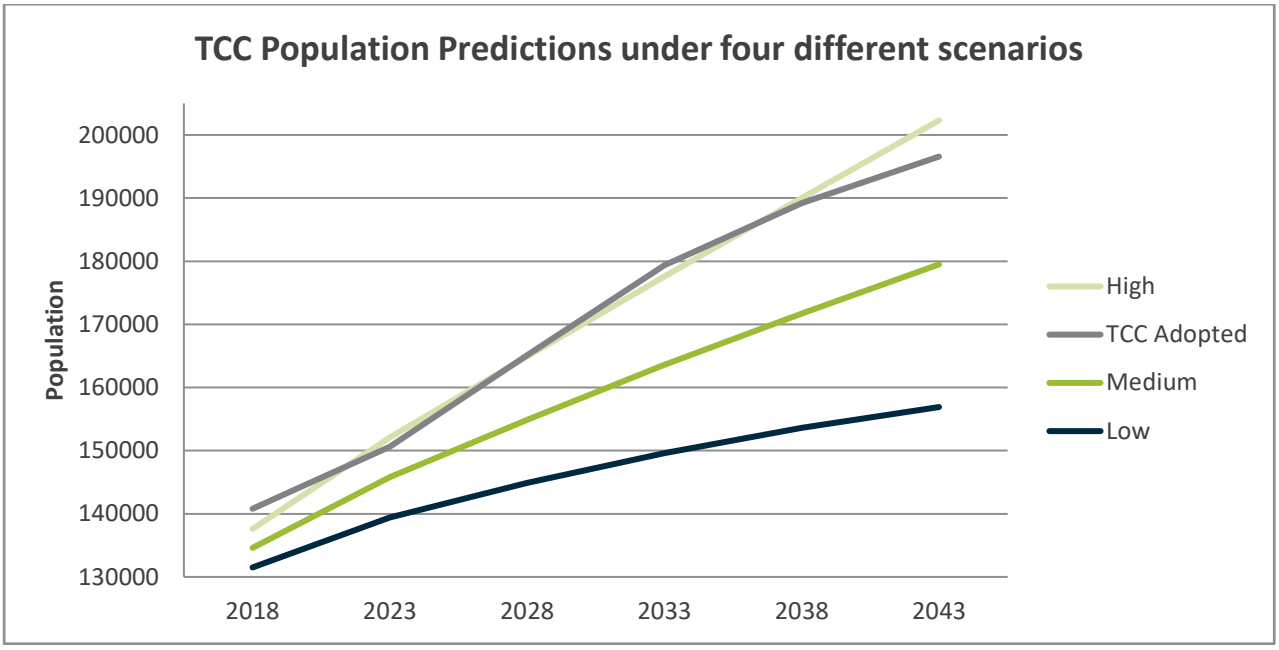


Figure 13: Projected Population Growth

4.1.2 Consumption patterns and behaviour changes

Household waste can be significantly impacted by changes in consumption patterns and behaviour changes alongside a number of other factors including:

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

In the 2020 Colmar Brunton Better Futures report, dated February 2020, the build-up of plastic in the environment, and too much waste/rubbish generated were ranked two of the top concerns for New Zealanders. Similarly, the 2021 Colmar Brunton Better Futures report, dated March 2021, highlighted that 36% of Kiwis are committed to living more sustainably. In turn, they are making sustainable choices as consumers and becoming more aware of the businesses that are actually “walking the talk”.

As the community changes its behaviours, demand will increase for kerbside collection of recyclables and organics and there will be increased demand for the collection of other recoverable materials as well as the associated processing infrastructure.

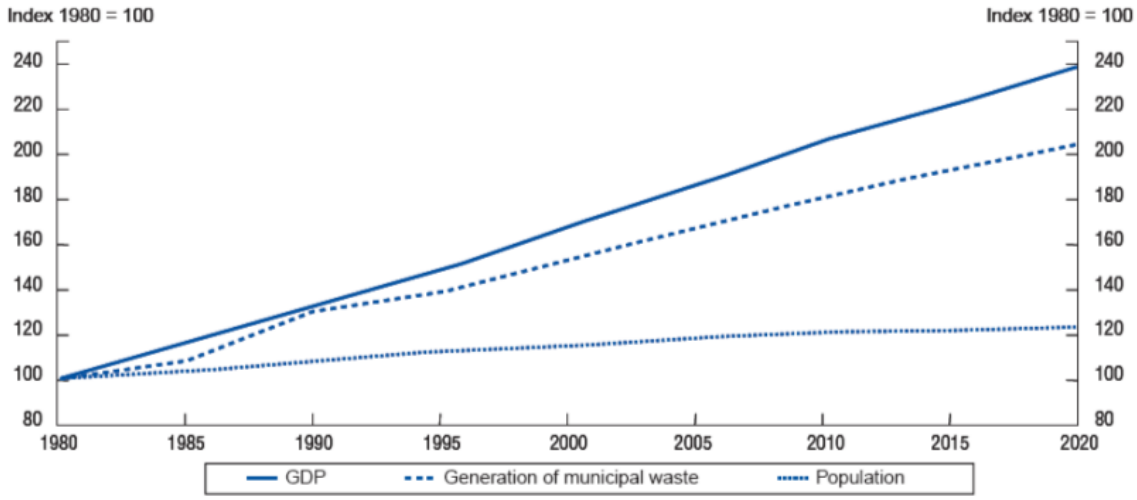
These issues are the target of a range of council and government policies and programmes, both at a local and national level. Although contributing factors such as family size and household income are difficult to influence, there are positive correlations between attitude toward the environment and waste generation that can be influenced. Other important factors are the presence of volume-based charging systems, such as user-pays schemes and other economic disincentives such as waste levies.

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

4.1.3 Economic activity

Research from the UK[29] and USA[30] suggests that underlying the longer-term pattern of household waste growth is an increase in the quantity of materials consumed by the average household and that this in turn is driven by rising levels of household expenditure. This is depicted in **Error! Reference source not found.**, which shows the growth in municipal waste plotted against GDP and population. The chart shows that waste has tended to increase at a rate slightly below GDP but noticeably above the level of population growth.

Figure 14: Municipal waste generation, GDP and population in OECD 1980 - 2020



Source: OECD 2001.

Generally speaking, an increase in commercial and industrial activity as a result (most likely) of improved economic conditions will have a direct impact on the amount of waste that is generated.

Although COVID-19 has impacted the national and global economy, and there is much uncertainty about what the future economic environment will be, there is no denying that the economy in Tauranga is currently experiencing a period of growth. This is reflected in the continued increase in the building construction activity.

Other changes to commercial/industrial activity such as major developments and large scale infrastructure projects influence the amount of waste generated per capita. As identified in the LTP adopted in July 2021, TCC is planning to invest $4.6 billion in its capital programme over the next ten years. This is in addition to a significant investment in Tauranga from Waka Kotahi NZ Transport Agency, with a $1.4 billion investment in the transport system to improve the way we move around the city.

Councils four Infrastructure Acceleration Fund applications have all been selected to progress to a formal Request for Proposal process, with detailed funding applications to be lodged with Kāinga Ora Homes and Communities by 17 December 2021. The funding is for an additional $185 million to address housing availability and affordability issues by developing the supporting infrastructure required by its growing

[29] Eunomia (2007), *Household Waste Prevention Policy Side Research Programme*, Final Report for Defra, London, England
[30] EPA (1999) National Source Reduction Characterisation Report for Municipal Solid Waste in the United States

inner-city population.

These projects and investment will ultimately have an impact on existing and future waste services.

4.1.4 Impact of waste flows from other districts

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

Traditionally domestic and commercial waste diverted from Western Bay of Plenty has been received at TCC's Transfer Stations. With the introduction of kerbside services in the Western Bay in July 2021, this is expected to reduce. Western Bay of Plenty District Council may also upgrade the waste facilities available in their district which would also reduce the impact on TCC's Transfer Station.

4.1.5 Natural disaster events

Natural and man-made disasters apply a different pressure upon demand for waste collection, recycling, recovery, treatment, and disposal services by potentially creating a significant volume of waste, which may be contaminated, in a very short timeframe. The earthquakes in Christchurch, the COVID-19 pandemic and the management of waste following the Rena disaster re-emphasise the need for planning. Lessons can be learnt from these events to assist in preparing for future natural disaster events in Tauranga.

4.1.6 National and Local Government Policy and Legislation

The existing legislation and any subsequent changes can have significant impacts upon the future demand for waste collection, recycling, recovery, treatment, and disposal services.

The following section sets out the strategic, legislative and policy framework that influences and drives the demand for waste collection, recycling, recovery, treatment, and disposal services in Tauranga and the rest of Aotearoa New Zealand. The existing framework for managing and minimising waste is demonstrated in Figure 12 below:

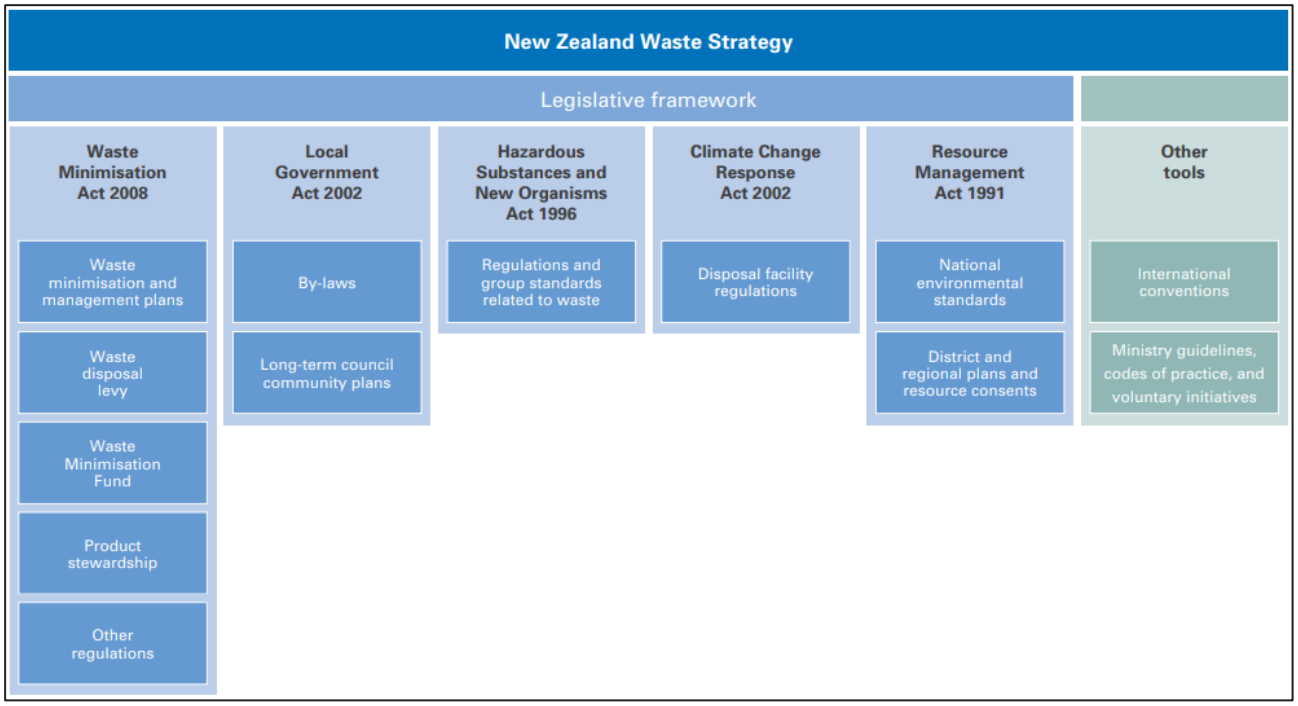


Figure 15: Existing Legislative Framework (Source: New Zealand Waste Strategy 2010)

At the time of drafting this Waste Assessment, the Government had commenced a wide-ranging review of its strategic and legislative documents to transform Aotearoa New Zealand's waste outcomes. The reason being is that the existing New Zealand Waste Strategy and associated legislation, namely the WMA, is over 13 years old and no longer fit for purpose. This is highlighted by the fact that Aotearoa New Zealand is one of the highest generators of waste per person in the world, and the amount of waste we create is increasing. We are also sending more of this waste to landfill each year, when much of this could be recycled, reprocessed, or reused.

Therefore, in assessing demand for waste collection, recycling, recovery, treatment, and disposal services, we have considered the existing strategic and legislative context in sections 5.1.6.1 of this report. As well as the proposed changes, as set out in the Issues and Options for New Waste Legislation report[31], Waste Reduction Work Programme [32], and plan for the draft Emissions Reduction Plan[33], as summarised in section 5.1.6.2 below.

Existing National Government Policy and Legislation Framework

A number of Strategies and Acts of Parliament combine to provide the legal framework for waste management and minimisation in Aotearoa New Zealand. These provide the legislative imperative and tools to support progress toward the high-level direction outlined in the New Zealand Waste Strategy 2010, so careful attention is given to these in developing the Waste Assessment.

New Zealand Waste Strategy

Waste management and minimisation in Aotearoa New Zealand is underpinned by the existing New Zealand Waste Strategy 2010, which sets out the long term policy priorities for waste management and minimisation and allows for a flexible approach that can be adapted to different situations with only two

[31] Ministry for the Environment. October 2021. *Te kawe i te haepapa para | Taking responsibility for our waste: Proposals for a new waste strategy; Issues and options for new waste legislation*. Wellington: Ministry for the Environment.
[32] Ministry for the Environment. *Waste reduction work programme*. Wellington: Ministry for the Environment. Published August 2021.
[33] Ministry for the Environment. 2021. *Te hau mārohi ki anamata | Transitioning to a low-emissions and climate-resilient future: Have your say and shape the emissions reduction plan.* Wellington: Ministry for the Environment

goals:

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

Waste Minimisation Act 2008 (WMA)

The WMA is the primary legislation driving solid waste management and minimisation and its purpose is to:

> *"encourage waste minimisation and a decrease in waste disposal in order to*
>
> *(a) protect the environment from harm; and*
>
> *(b) provide environmental, social, economic, and cultural benefits."*

To achieve the aim, the WMA:

- imposes a levy on all waste disposed of in landfills to generate funding to help local government, communities and businesses minimise waste. The Waste Disposal Levy, which was initially set at $10/tonne in 2009, is progressively increasing annually from the current rate of $20/tonne in 2021 to $60/tonne on the 1st July 2024.
- establishes a process for government accreditation of product stewardship schemes, which recognises those businesses and organisations that take responsibility for managing the environmental impacts of their products.
- requires product stewardship schemes to be developed for certain 'priority products' where there is a high risk of environmental harm from the waste or significant benefits from recovering the product. There are currently six priority products that must now be managed under a product stewardship scheme as follows: tyres; eWaste; refrigerants and other synthetic greenhouse gases; agrichemicals and their containers; farm plastics; and packaging (beverage packaging, single-use plastic packaging).
- allows for regulations to be made to control the disposal of products, materials or waste, require take-back services, deposit fees or labelling of products.
- allows for regulations to be made that make it mandatory for certain groups (e.g., landfill facility operators) to report on waste to improve information on waste minimisation.
- clarifies the roles and responsibilities of territorial authorities with respect to waste minimisation.
- establishes the Waste Advisory Board to give independent advice to MfE on waste minimisation issues.

Climate Change Response Act 2002 and amendments

The Climate Change Response Act 2002 and the Climate Change Response (Emissions Trading Reform) Amendment Act 2020 provide the basis for the New Zealand Greenhouse Gas Emission Trading Scheme (ETS). The Climate Change Response Act 2002 requires landfill owners to purchase emission trading units to cover methane emissions generated from their landfill. Should any future solid waste incineration plants be constructed, the Climate Change Response Act 2002 would also require emission trading units to be purchased to cover carbon dioxide, methane, and nitrous oxide emissions from the incineration of household waste.

In August 2021, the New Zealand Government announced new regulatory settings for the ETS over the next five years to 2026, updating the overall cap on unit supply, setting auctioning volumes, and raising both the auction floor price and the cost containment reserve trigger price. The changes reflect the anticipation that there will be strong price developments over the next five years as businesses contest for additional New

Zealand Units. The auction floor price will rise from $20 to $30 in 2022, before rising incrementally to $39.32 by 2026. At the upper edge of the price corridor, the cost containment reserve trigger price is rising from $51 to $70 in 2022, before steadily increasing to $110.15 in 2026. The more stringent settings are in line with recent recommendations from the independent Climate Change Commission to strengthen the ETS to achieve New Zealand's first three five-year emissions budgets to 2035.

This is alongside the recent changes to increase the Waste Disposal Levy. When combined with the ETS, the additional costs are expected to reduce demand for landfill services and increase demand for recycling and waste diversion. They may also increase the need for enforcement to address illegal dumping.

The Local Government Act 2002 (LGA 2002)

The LGA 2002 requires Territorial Authorities to assess how well they provide collection and reduction, reuse, recycling, recovery, treatment, and disposal of waste in their district, and makes Territorial Authorities responsible for the effective and efficient implementation of their WMMP. The LGA 2002 also contains various provisions that may apply to Territorial Authorities when they are preparing their WMMPs, including consultation and bylaw provisions.

The Resource Management Act 1991 (RMA)

The RMA is the main law governing how people interact with natural resources. As well as managing air, soil, freshwater, and the coastal marine area, the RMA regulates land use and the provision of infrastructure, which are integral components of Aotearoa New Zealand's resource management system. People can use natural resources if doing so is allowed under the RMA or permitted by a resource consent.

Although it does not specifically define 'waste', the RMA addresses waste management and minimisation activity through controls on the environmental effects of waste management and minimisation activities and facilities through national, district and local policy, standards, plans and consent procedures. In this role, the RMA exercises considerable influence over facilities for waste disposal and recycling, recovery, treatment, and others in terms of the potential impacts of these facilities on the environment.

In February 2021, the Government announced it would repeal the RMA and enact new legislation based on the recommendations of the Resource Management Review Panel[34]. The three proposed acts are:

- Natural and Built Environments Act (NBA), as the main replacement for the RMA, to protect and restore the environment while better enabling development
- Strategic Planning Act (SPA), requiring the development of long-term regional spatial strategies to help coordinate and integrate decisions made under relevant legislation; and
- Climate Adaptation Act (CAA), to address complex issues associated with managed retreat.

Parliament has considered over 3000 submissions to the NBA exposure draft document, with a response expected by 31 January 2022. This will inform the preparation of the full Bill, which is due to be introduced in mid-2022 alongside the Strategic Planning Bill. Both Bills will then follow a standard legislative and select committee process. The Government's aim remains to have the NBA and Strategic Planning Act passed into law in this parliamentary term.

The Litter Act 1979

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

Historically, the enforcement process has been difficult and often unsuccessful, with very few successful

[34] New Directions for Resource Management in New Zealand, Report of the Resource Management Review Panel, June 2020

prosecutions in Aotearoa New Zealand under the Litter Act. It is accepted that prosecuting litter offenders through the courts is not the most efficient way of dealing the litter problem as the fines imposed are not high enough to act as a deterrent and full costs are usually not recovered. As such, the Litter Act is currently being reviewed alongside the WMA.

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

The HSNO Act addresses the management of substances that pose a significant risk to the environment and/or human health, from manufacture to disposal. The HSNO Act relates to waste management primarily through controls on the import or manufacture of new hazardous materials and the handling and disposal of hazardous substances. Hazardous substances commonly managed by councils include used oil, asbestos, agrichemicals, LPG, and batteries. The HSNO Act provides minimum national standards that may apply to the disposal of a hazardous substance. However, under the RMA a Territorial Authority may set more stringent controls relating to the use of land for storing, using, disposing of or transporting hazardous substances.

The Health Act 1956

The Health Act 1956 places obligations on Territorial Authorities (if required by the Minister of Health) to provide sanitary works for the collection and disposal of rubbish, for the purpose of public health protection. It specifically identifies certain waste management practices as nuisances and offensive trades.

The Public Health Bill is currently progressing through Parliament. It is a major legislative reform reviewing and updating the Health Act 1956, but it contains similar provisions for sanitary services to those currently contained in the Health Act 1956. It is expected to be enacted in late-2022.

The Health and Safety at Work Act 2015 (HSWA)

The HSWA sets out the principles, duties, and rights in relation to workplace health and safety. The HSWA outlines health and safety responsibilities for the management of hazards in relation to employees at work. This could potentially include working with hazardous substances and in the collection and management of waste. Under current legislation and the Health and Safety at Work Act, the Council has a duty to ensure that its waste contractors are operating in a safe manner.

Other Acts related to urban development and building

Various pieces of policy and legislation in the development and construction sector will have a direct impact on the management and impact of construction and demolition waste. The Resource Management (Enabling Housing Supply and Other Matters) bill was introduced at the end of 2021 and will allow up to three dwellings to be established on residential sites in in New Zealand's main urban areas, including Auckland, and greater Hamilton, Tauranga, Wellington, and Christchurch. In addition, it will speed up the implementation of the National Policy Statement for Urban Development, which enables greater intensification in those same cities. Many of these developments are unlikely to require resource consent.

This additional intensification is very likely to result in significant volumes of construction and demolition waste from the removal of existing dwellings, and construction of new dwellings.

In addition, amendments to the Building Act have recently been enacted to drive product stewardship, the recording of product information, and support the use of new, innovative, and efficient building methods.

Other legislation

Other legislation that relates to waste management and/or reduction of harm, or improved resource efficiency from waste products includes:

- Biosecurity Act 1993

- Radiation Protection Act 1965
- Ozone Layer Protection Act 1996
- Agricultural Chemicals and Veterinary Medicines Act 1997

National Waste Strategy and Legislation Review

The following section summarises the information that has been released as part of the Government reviews of the Waste Strategy and new and more comprehensive legislation on waste to replace the WMA and the Litter Act 1979. It also provides an overview of the work already underway as set out in the Waste Reduction Work Programme[35].

New Waste Strategy and Waste Legislation

To address the unsustainable linear "take, make, dispose" model, the Government is reviewing the 2010 Waste Strategy. They have identified that the management of waste needs to be long term and set a clear and strong direction towards a different way of thinking and living.

The proposed Waste Strategy[36] is intended to guide and direct our collective journey toward a circular economy, starting with how we think about and manage the products and materials that currently go into our waste disposal systems. That Waste Strategy looks out to 2050 and sets an overall course for change with three broad stages. For the first stage, to 2030, it includes proposed priority areas with supporting headline actions. It also includes specific targets to help assess our overall progress in reducing waste and making better use of resources.

Alongside the Waste Strategy, MfE are working on a long-term waste infrastructure plan to guide investment in resource recovery infrastructure for Aotearoa New Zealand. That plan is due to be finalised at the same time as the strategy in late-2022. These two documents will then inform the first action and investment plan (AIP) that will set out the priorities and key actions needed in the short term. An AIP will be developed every two to three years to take stock of what we've done and where we need to go to achieve the vision and targets.

The vision of a low-waste circular economy is supported by six key principles to guide all future work and inform the choices we make along the way:

1) *Design out waste, pollution and emissions, and unnecessary use of materials | Whakatahangia ngā para, ngā parahanga me ngā tukuwaro me te whakamahi noa i ngā matū*
2) *Keep products and materials in use at their highest value | Whakamahia noatia ngā taputapu me ngā matū i te wā e kaha rawa ana te wāriu*
3) *Regenerate natural systems, so the environment is healthy for future generations | Whakarauoratia ngā pūnaha taiao, kia ora toitū ai te taiao mō ngā uri whakatipu*
4) *Take responsibility for the past, present and future condition of our natural environment | Hāpaingia ake te haepapa mō te oranga o mua, o nāianei me te anamata o te taiao*
5) *Think in systems, where everything is interconnected | Whakaarohia ngā pūnaha e whātuitui ai ngā mea katoa*
6) *Deliver equitable and inclusive outcomes | Kia taurite, kia tapatahi ngā hua*

Within the proposed Waste Strategy consultation document, MfE have proposed targets for the whole of Aotearoa New Zealand, as well as for households and businesses out to 2030, to monitor and measure our

[35] Waste reduction work programme. Wellington: Ministry for the Environment. Published August 2021.
[36] Ministry for the Environment. 2021. *Te kawe i te haepapa para | Taking responsibility for our waste: Proposals for a new waste strategy; Issues and options for new waste legislation*. Wellington: Ministry for the Environment.

progress. These targets include both reductions in waste generation and waste disposal, as set out in Table 8 below.

Table 17: Proposed Waste Strategy 2030 Targets

Area	Responsibility	Strategic target (by 2030)
Waste	Whole country	Reduce waste generation by 5 – 10% per person
	Public sector	Reduce waste generation by 30 – 50%
	Businesses	Reduce waste disposal by 30 – 50%
	Households	Reduce waste disposal by 60 – 70%
Emissions	Whole country	Reduce biogenic waste methane emissions by at least 30%
Litter	Whole country	Reduce litter by 60%

The Government is also proposing new and more comprehensive legislation on waste to replace the Waste Minimisation Act 2008 and the Litter Act 1979. New legislation is needed to put in place the tools and arrangements that will deliver the new waste strategy and ensure, as a country, we make good use of funds generated by the expanded waste disposal levy.

New legislation will enable a complete reset of the purposes and principles, governance arrangements, and roles and responsibilities in waste legislation. It also offers the opportunity to strengthen and clarify regulatory and enforcement powers. It will also help establish the foundations for transforming how we think about and manage waste, alongside the already announced Government Waste Reduction Work Programme[37]. This programme is discussed further below.

The new Waste Act will aim to:

- embed a long-term strategic approach across central and local government for achieving change, supported by consistent data collection, evaluation, and reporting
- create the governance and administrative framework needed to support effective investment and use of waste levy funds
- put individual and collective responsibility for how we deal with unwanted material at the heart of a new regulatory framework of obligations on organisations, households, and individuals, building on the duty-of-care model used in other jurisdictions
- provide new and enhanced regulatory tools and levers to support the waste strategy and emissions reductions
- create stronger accountability and reporting provisions
- update and broaden compliance, monitoring, and enforcement powers
- fix miscellaneous aspects of the existing legislation.

New legislation will also update and incorporate the Litter Act, which prohibits littering and dumping in

[37] Waste reduction work programme. Wellington: Ministry for the Environment. Published August 2021.

public places, and reframe how litter is thought of and managed.

MfE have indicated that the development of the new legislation will align with other reforms and amendments being undertaken nationally. This includes the RMA reforms and draft Emissions Reduction Plan that have been consulted on separately and discussed further below.

New Zealand Waste Reduction Work Programme

The New Zealand Government recognises that this is not just a waste issue and that progressing towards a circular economy requires change across all aspects of the economy. Some of this work is set out in further detail within the New Zealand Waste Reduction Work Programme, which is a high-level summary of the proposed strategic and legislative changes proposed by MfE.

The goal of the Waste Reduction Work Programme is "*To reduce waste as part of a transition to a low-carbon circular economy*" and there are five main objectives. Within each objective sit individual workstreams, many of which are already under way. A summary of the Waste Reduction Work Programme is provided below.

<u>Objective 1: Building the foundations for a transformed waste system.</u>

The foundations needed to transform Aotearoa New Zealand strategic and legislative frameworks for managing waste will be in place by mid-2023. Underpinning this is the preparation of a new Waste Strategy to transform Aotearoa New Zealand to a low-carbon circular economy. This will supersede the 2010 Waste Strategy and drive priorities, investment, performance and more coordination across central and local government, industry, iwi/Māori, and communities. The new Waste Strategy is expected to be published in mid-2022 and inform the following:

- Replacing the WMA and Litter Act 1979 with a single comprehensive Act.
- Contribution to the development of the Emissions Reduction Plan.
- Development of a national Waste Infrastructure Plan with a 10+ year horizon, setting out the path to a fit-for-purpose resource recovery system. This plan will be supported by an infrastructure and services stocktake.
- Expansion of data collection systems to improve baseline and performance monitoring data sets. This will coincide with the waste disposal levy expansion.

<u>Objective 2: Expanding investment in the sector.</u>

MfE have advised that there is an estimated $2.1 - 2.6 billion deficit in Aotearoa New Zealand's onshore resource recovery infrastructure. This will be partially addressed initially by the increase and expansion of the waste disposal levy from mid-2021 to mid-2024, which will generate an increase in revenue for investment in waste reduction from approximately $40 million per year to $270 million per year. The new waste strategy and long-term waste infrastructure plan are being developed to guide this future investment by both central and local government.

MfE will also continue to support projects through the Waste Minimisation Funds (WMF), with approximately $20 million allocated in 2022. In addition, MfE will continue to allocate the $124.3 million economic stimulus package allocated to resource recovery infrastructure over three years from the COVID-19 Response and Recovery Fund. At present, $80 million has been committed to eight projects through Deeds of Funding. An additional $41 million in projects will be confirmed and announced by mid-2022. Investment will be complete by late 2023. MfE have advised that this is a first step in addressing the estimated $2.1 - 2.6 billion deficit in Aotearoa New Zealand's onshore resource recovery infrastructure. It will also stimulate business and employment opportunities across the country. One of the approved packages includes the redevelopment of the Te Maunga Transfer Station into a new resource recovery

facility with up to $20.5 million allocated to TCC.

To specifically target plastic waste, MfE introduced a $50 million Plastics Innovation Fund to operate over four years, with investment criteria guided by plastics research, innovation and waste minimisation priorities. The fund opened in October 2021, with investment complete by mid-2025.

While an additional $2.6 million per year will be allocated from the Contaminated Sites Remediation Fund. Funding rounds close in March and September annually.

Objective 3: Introducing system-level change.

To support and implement the strategic and legislative changes across Aotearoa New Zealand, system-level changes will continue to be developed. This includes extension of reporting requirements and data collection as a result of the waste disposal levy changes.

MfE are investigating whether to implement the recommendations from the Standardisation of Kerbside Collections in Aotearoa Report[38], which were to: incentivise councils to implement kerbside collections of food waste; move to a best practice model for dry recycling, and standardise the materials collected in kerbside recycling nationally. In addition, MfE continue to investigate a Container Return Scheme (CRS) as one way of addressing Aotearoa New Zealand's low resource recovery rates and high litter associated with beverage containers.

Objective 4: Addressing individual material streams and products.

To target problems with individual materials and products, MfE will continue developing a regulated product stewardship schemes for the six identified priority products. The first regulated product stewardship scheme for tyres was accredited in November 2021, with others expected to be accredited over the next three years to 2024.

MfE are also phasing out a range of single-use plastic items and hard-to-recycle plastic packaging by mid-2025, as per the recommendations from the report Rethinking Plastics in Aotearoa New Zealand[39]. A focus on managing plastic waste is also set out in the National Plastics Action Plan for Aotearoa New Zealand[40], with a vision that plastic use is sustainable and innovative, and plastics are used in a way that protects the environment and benefits society. This will be supported by a transition to a low-carbon circular economy.

Through the WMF, MfE are also prioritising investment in organics/food waste and construction and demolition materials. This includes data and evidence gathering to support future initiatives that will contribute towards strategic-level targets in the new waste strategy.

Objective 5: Strengthening operational and compliance activity.

To support the wide range of changes under way, MfE are expanding and strengthening operational and compliance systems. This includes preparing a strategy for improved compliance, monitoring, and enforcement under the WMA; management of the online waste levy system (OWLS 2.0); and updated guidance to help identify, investigate, and manage contaminated land in the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health.

Emissions Reduction Plan

On 31 May 2021, the independent Climate Change Commission released its advice to the Government on

[38] Recommendations for standardisation of kerbside collections in Aotearoa, Prepared for Ministry for the Environment, dated May 2020.
[39] Rethinking Plastics in Aotearoa New Zealand, prepared by a panel convened from the Office of the Prime Minister's Chief Science Advisor, dated 8 December 2019
[40] National Plastics Action Plan for Aotearoa New Zealand, prepared by Ministry for the Environment, dated September 2021

climate action in Aotearoa[41]. The advice presented ambitious, achievable, and equitable paths that Aotearoa New Zealand can take to meet its emission reduction targets and contribute to global efforts to address climate change.

Within the Governments consultation document on the future draft Emissions Reduction Plan[42] the Government highlights that they propose to broadly accept the Climate Change Commission's advice on emissions budgets. This includes recognising the commitment of Aotearoa New Zealand to reduce biogenic methane emissions by 10 per cent by 2030, and 24 – 47 per cent by 2050, relative to 2017 levels. While greenhouse gases (excluding biogenic methane) are to be zero by 2050[43]. Currently, Aotearoa is not on track to achieve these targets.

This affects waste disposal, including historical disposal of organic material at landfills, as waste currently make up 9 per cent of Aotearoa New Zealand's biogenic methane emissions and 4 per cent of the country's total greenhouse gas emissions.

In response, a number of proposals that specifically target emissions from waste includes, but is not limited to:

- Moving Aotearoa New Zealand towards a circular economy.
- Additional funding for education and behaviour change initiatives to help households, communities and businesses reduce their organic waste (for example, food, cardboard, timber).
- A proposal to ban the disposal of food, green and paper waste at landfills for all households and businesses by 1 January 2030. Particularly if they do not capture landfill gas.
- Standardised approach to kerbside collections for households and businesses, which prioritises separating recyclables such as fibre (paper and cardboard) and food and garden waste.
- Potentially supporting energy from waste schemes.
- Requiring transfer stations to separate and recycle materials, rather than sending them to landfill.
- Fast-tracking a waste data and licensing system so that better data can be collected on our waste.
- Developing a national infrastructure plan for waste and setting out a path for better resource recovery.

4.2 TCC Strategic Plans and Regulation

In addition to owning waste facility assets and providing waste services, TCC also has responsibilities and powers as a regulator and statutory obligations by national legislation, including the WMA. As a result, TCC has a number of local government strategic and legislative documents that are integral to waste management. The relevant documents are summarised below:

4.2.1 Long Term Plan 2021-2031 (LTP)

Every three years Council is required to create a LTP that outlines planned investments and activities over the next decade. The LTP provides information on each activity the Council undertakes and outlines its key objectives and drivers, contribution to community outcomes, key projects for the 10-year period, and financial and asset management information. The LTP also sets targets to measure progress for each

[41] *Ināia tonu nei: a low emissions future for Aotearoa - Advice to the New Zealand Government on its first three emissions budgets and direction for its emissions reduction plan 2022 – 2025*. Prepared by the Climate Change Commission. Dated 31 May 2021.
[42] Ministry for the Environment. 2021. *Te hau mārohi ki anamata | Transitioning to a low-emissions and climate-resilient future: Have your say and shape the emissions reduction plan.* Wellington: Ministry for the Environment
[43] As required under the Climate Change Response Act 2002.

activity.

In relation to waste activities, the LTP sets several targets, as set out in Table 9 below. However, reliable data and reporting is an issue in the waste industry due to assumptions and the number of services and facilities. This has resulted in the setting of targets in the LTP that may be hard to accurately measure. For example, data utilised to set the target to reduce waste to landfill included waste collected from both Tauranga and the Western Bay of Plenty District. The waste to landfill target also does not include waste disposed at cleanfill or managed fill sites or biosolids to landfill, as these waste streams are not currently recorded in the Aotearoa New Zealand statistics on waste per capita.

This means that the targets and key performance indicators from the LTP have not been adopted verbatim. TCC will review its key performance indicators during the development of the 2024-2034 Long Term Plan. At this time, TCC will endeavour to align the WMMP and LTP targets based on new data and monitoring gathered over the next three years.

Table 18: Sustainability and Waste LTP 2021-2031 Targets

Level of Service	How it will be measured	2019/20 Result	2021/22 Target	2022/23 Target	2023/24 Target	2024/25 – 2030/31 Target
We will provide a rubbish collection service to all household properties in urban and rural-residential areas						
Percentage of residents that satisfied with Council run rubbish collection service.		New Measure	75%	75%	75%	75%
We will provide transfer stations, and maintain closed landfill sites						
Transfer stations provide customers with a 7-day service for rubbish and green waste facilities and free access to a recycling centre (except on Good Friday and Christmas Day)		Not achieved	Achieved	Achieved	Achieved	Achieved
Number of abatement notices/infringements issued in relation to closed landfill resource consents		Nil	Nil	Nil	Nil	Nil
Providing behaviour change programmes across community that target community behaviours and lead to a reduction of waste to landfill						
Average amount of waste sent to landfill per capita/per annum based on current operating environment Note: Refer to preceding text identifying data source.		523kg	550kg	500kg	450kg	450kg

4.2.2 Bylaws

TCC is able to make bylaws to protect the public from nuisance, to protect, promote and maintain public health and safety, and to minimise the potential for offensive behaviour in public places. This includes TCC operating in the role of regulator with respect to:

- management of litter and illegal dumping under the Litter Act 1979
- trade waste requirements
- nuisance-related bylaws
- licensing of waste operators under TCC's current Waste Management and Minimisation Bylaw 2012

Waste Management and Minimisation Bylaw 2012

The purpose of the Waste Management and Minimisation Bylaw is:

a. To promote waste minimisation and management objectives and to support the implementation of the WMMP, particularly where Tauranga City Council does not have direct control of the waste stream, and

b. To promote safe kerbside collection of waste, including recyclables, so that it does not accumulate and become offensive or harbour vermin.

This Bylaw also includes the ability to license operators and to require certain performance standards from them.

TCC is currently reviewing this Bylaw. It is intended to publicly consult on the WMMP and Bylaw at the same time in March 2022. The Bylaw proposes a number of changes, including, but not limited to:

- Improving waste operator licensing provisions so that there is better data collection and alignment with national legislative changes.
- Introducing Construction and Demolition waste management plans for projects within our city.
- Introduction of waste management plans and minimum requirements for waste bin storage and access for Multi-Unit Developments.

Trade Waste Bylaw 2019

TCC manages both liquid and solid waste. This includes trade waste, which is defined as in the Trade Waste Bylaw as "any liquid, with or without matter in suspension or solution, that is or may be discharged in the course of any trade or industrial process or operation, or in the course of any activity or operation of a like nature; and may include Condensing Water or Cooling Water and Stormwater which cannot be practically separated."

The purpose of the Trade Waste Bylaw is to:

a) protect the health and safety of people associated with the Wastewater System;

b) protect public health and the environment from the effects of Trade Waste discharges;

c) protect the Wastewater System from damage, misuse and interference;

d) enable Tauranga City Council to comply with the Resource Management Act 1991 particularly in respect to resource consents relating to the disposal of treated Wastewater, biosolids and discharges to air; and

e) manage the allocation of Wastewater capacity available to residential and Trade Waste customers.

4.2.3 The Solid Waste Asset Management Plan (2021)

Asset management planning is a comprehensive, integrated process to ensure delivery of services from infrastructure is provided in a way that promotes social, economic, environmental, and cultural well-being, taking a sustainable development approach. The Solid Waste Assessment Management Plan details TCC sustainability and waste assets, which includes public and household bins, collection services, transfer

stations, closed landfill, and education on sustainability and waste minimisation. It allows TCC to prepare for asset replacement and ensure that we undertake actions to provide a community agreed level of service in the most cost-effective manner while outlining associated risks. The plan defines the services to be provided, how the services are provided and what funds are required to provide the services over a 10-year planning period and aligns with the LTP.

4.2.4 The Tauranga City Plan (2013)

The Tauranga City Plan sets objectives, policies and rules for all subdivision, land use and development for all the land in our city. Objectives describe the desired outcome for a particular resource management issue. Policies describe the direction to be taken to achieve the objective and outline the considerations specific to the achievement of a particular objective. Rules implement the direction of the policies. In relation to waste, there are provisions that recognise the functional and operational requirements of activities and development, in turn, requiring that that there is adequate space and an appropriate location for storage and waste management facilities. This includes on residential sites.

The City Plan is currently being review. It is expected that a series of plan changes to address issues, which could include further development controls for waste storage areas for new buildings/dwellings, will begin to be prepared in 2022.

4.3 Council and Industry Collaborations

TCC is contributing to multiple collaborative projects throughout New Zealand alongside Councils, waste management industry partners and the Ministry for the Environment. These collaborations include, but are not limited to:

1. Regional Waste Strategy, which is a joint assessment between the Bay of Plenty Regional Council and Waikato Regional Council to identify the contribution waste makes to greenhouse gas emissions.
2. Templates and best practice guidance for Waste Assessments, Waste Management and Minimisation Plans, and Solid Waste Bylaws with Waikato and Bay of Plenty Territorial Authorities.
3. Procurement of Waste Operator Licensing and Data with Waikato and Bay of Plenty Territorial Authorities.
4. Education and communication.
5. Researching and targeting specific areas of waste, such as construction and demolition, soft plastics, and aquaculture.

TCC is also an active member of WasteMINZ, who are the largest representative body of the waste, resource recovery and contaminated land management sectors in New Zealand. WasteMINZ acts on behalf of its members to achieve ongoing and positive development of the waste industry through strengthening relationships, facilitating collaboration, knowledge sharing and championing the implementation of best practice standards.

These connections and collaborations assist TCC in ensuring we are leading the way with waste management and minimisation best practice.

4.4 International Commitments

New Zealand is party to the following key international agreements:

1. Montreal Protocol – to protect the ozone layer by phasing out the production of numerous substances
2. Basel Convention – to reduce the movement of hazardous wastes between nations
3. Stockholm Convention – to eliminate or restrict the production and use of persistent organic pollutants; and
4. Waigani Convention – bans export of hazardous or radioactive waste to Pacific Islands Forum countries.

4.5 Other strategic considerations

Several national and global changes over recent years have impacted TCC's waste services as follows:

- The world is in transition, and circular economy is gaining momentum amongst governments, businesses, and non-government organisations. This growing international profile of the circular economy is due to its ability to deliver environmental benefits, increased resource efficiency, increased productivity, and job creation. Similarities amongst countries with ambitious circular economy goals include strong recycling and waste management frameworks, often augmented by specific laws that deal with packaging and other materials.
- As a result of other countries restricting the import of certain recyclables, primarily mixed paper, and mixed plastic, such as China's "National Sword Policy", there has been a significant reduction in the export of plastic overseas. In turn, Aotearoa must continue to review our national recycling and resource recovery infrastructure. Alternative markets must be developed to handle the volumes of waste materials no longer exported.
- COVID-19 has tested the resilience of the recycling systems nationally. In Tauranga, the MRF closed during the Level 4 nationwide lockdowns in early 2020 and mid-2021 to reduce the potential of the virus spreading. This resulted in materials that would normally be recycled being sent directly to landfill. This has resulted in ongoing issues with contamination of recycling waste within kerbside and resource recovery parks, as behaviours were affected. Additionally, there has been a significant increase in the use of Personal Protective Equipment (i.e. masks) that is usually single-use, as well as a reduction in reusable packaging (i.e. coffee keep cups) to reduce the spread of COVID-19.
- Climate change will continue to impact upon waste infrastructure and services provided by Council. The National Climate Change Risk Assessment[44] highlights that active and closed landfills and contaminated sites across Aotearoa New Zealand are currently at risk from extreme weather events and sea-level rise, as well as coastal and inland flooding, erosion, and rising groundwater. For Tauranga, this could see our closed landfills at Te Maunga and Cambridge Road affected. Any site failures can cause pollutants to mobilise, with potentially cascading consequences for public health, ecosystems, and the economy. For Māori, the potential for closed landfill damage to contaminate mahinga kai (food-gathering areas) and affect taonga species is likely to have consequences for cultural practices.

In taking the above demand drivers into account it is noted that there will be continued pressure on existing waste management and minimisation infrastructure and services. While there is adequate landfill disposal capacity in the medium to long term future using the Hampton Downs or Tirohia landfills in the Waikato, TCC wants to improve its capacity to divert waste.

[44] National Climate Change Risk Assessment, published in August 2020 by the Ministry for the Environment.

5 Identified Waste Issues / Gap Analysis

As has been discussed previously, we don't know what we don't know. The unknown primarily comes down to how we have historically collected waste data. We have a good understanding of the waste processed at our facilities, but there is still an unknown volume that is generated, serviced, and processed in other facilities. This creates multiple problems, including that we do not know the exact volumes of waste being discarded, who is generating it, what it consists of, or where it is going.

Recognising this and having reviewed progress against the 2016 WMMP Action Plan and considering the change in waste quantities and emerging events since the last WMMP, TCC have identified the following key waste issues that need to be addressed in the next WMMP. The issues are described for each relevant customer or waste category.

5.1 Household

Issue 1: The way we currently consume products leads to large quantities of waste

Our population continues to grow alongside record levels of consumption, which largely focus on a 'take-make-dispose' system. This is due to a lack of investment in waste infrastructure and services, with our ability to recycle and reuse resources limited in many parts of Aotearoa New Zealand. As well as consumer behaviour and mentalities.

This places immense stress on our diminishing resources, generates a significant volume of waste that largely ends up in landfill, and encourages further consumption. A fundamental shift in how we live and do business, alongside a substantial investment in waste infrastructure, is the only way to change this current model to a more resource-efficient and sustainable system.

Issue 2: There is a high volume of household waste going to landfill that could be diverted

The volume of waste disposed to landfill that is collected from household kerbside services in Tauranga has maintained steady at, or about, 200 kg/capita/year for the last six years. This is despite TCC previously investing in behaviour change and education programmes to reduce, re-use, and recycle waste.

Now that the rates funded household kerbside service has been established in Tauranga, with additional bins for every household to divert more waste from landfill, we expect this volume of waste to landfill to decrease. Especially as previous SWAP audits have identified that nearly 70% of all household kerbside waste could be diverted. Currently, based on the SWAP audit in December 2021, we still have approximately 50% of all household kerbside waste that could still be diverted. So, there is plenty more work to be done. This includes reducing contamination of recycling bins and increasing the number of households using the new kerbside food waste service.

There is also a high volume of household waste that is still disposed directly at the resource recovery parks that could be diverted from landfill. This includes food and garden waste, eWaste, construction and demolition materials, and other waste streams that could be diverted from landfill.

Issue 3: The proportion of our community living in multi-unit dwellings is growing

Approximately 10% of TCC's households live in multi-unit developments and this is expected to grow. Particularly with recent legislative changes being proposed by Government to increase housing supply. Access and storage restrictions at multiple-unit dwellings mean that TCC are unable to offer standard kerbside services to all of these premises, but still want to be able to offer the range of services to these customers as elsewhere in the city.

5.2 Businesses and organisations

Issue 4: Businesses and organisations need better services to divert waste from landfill

The SWAP data shows that readily recoverable dry recyclables, construction and demolition waste, organic material and re-usable items are disposed of at both TCC Transfer Stations. An unknown proportion of this waste comes from businesses and organisations. This includes waste from small and medium enterprises, such as, not for profit, community organisations, early childhood centres, and schools. Currently, these enterprises either engage private waste collection services or dispose of their waste directly at the two TCC provided Transfer Stations. There is an opportunity to develop more services for businesses to divert and dispose of their waste either at kerbside or at the Te Maunga resource recovery park.

5.3 Construction and demolition waste

Issue 5: There is a high volume of construction and demolition material going to landfill

The SWAP audits have identified that approximately a quarter of all waste to landfill by weight processed through the two Transfer Station was construction and demolition waste. In addition, there is an unknown quantity of construction and demolition waste being sent directly to cleanfill and landfills not operated by TCC. Therefore, TCC does not have accurate records and data of the volume of construction and demolition waste being generated within our city.

There is now an opportunity to engage and educate the construction and demolition industry to ensure they operate as high up the waste hierarchy as possible, but firstly reducing waste generation, before re-using or recycling waste at the upgraded Te Maunga resource recovery park and other facilities.

5.4 Biosolids waste

Issue 6: Disposing of biosolids to landfill affects cultural, environmental, social, and economic values

TCC recognises that in some instances the historical disposal of waste, such as biosolids, has not resulted in good outcomes.

While the recent vermicomposting trials have been successful in diverting up to 100% of biosolids from landfill, this has only been for a short period and TCC are currently awaiting the outcomes of a private resource consent application for a facility that they do not control. There is also a requirement that “backup” options are available for the disposal of biosolids in the event this type of waste cannot be diverted to a vermicomposting facility at any point in time.

Importantly, there are numerous opportunities for TCC to divert biosolids from landfill. These include, but are not limited to, fertiliser and soil conditioner for agricultural and forestry land, landfill capping, quarry rehabilitation, and energy / electricity generation.

5.5 All waste

Issue 7: Litter and illegal dumping, which has environmental and financial costs, is increasing

Litter and illegal dumping arise due a number of reasons including, a lack of waste infrastructure and services, costs, behaviour, and accidents. Although each act of littering or illegal dumping is usually, but not always, small in scale, it is a problem that has a huge environmental cost.

Additionally, the budget for monitoring, maintaining, cleaning, and enforcement action undertaken by TCC and other organisations continues to grow. This places additional stress and financial costs on our city’s

ratepayers.

Issue 8: Cost and volume uncertainty has risen due to legislation change or service interruption

Significant national regulation changes are occurring within this WMMP planning cycle. As previously summarised, MfE are reviewing the National Waste Strategy, WMA, and Litter Act, and are preparing an Emissions Reduction Plan. These changes will have a significant impact upon the activities that are undertaken by Councils throughout Aotearoa New Zealand.

In addition, the existing increases in the Waste Disposal Levy and an increase in price and reduction in availability of NZ Units in the ETS will drive the cost of disposal to landfill upwards. This financial cost, alongside the possible introduction of a container return scheme and other product stewardship schemes, may impact recycling bin composition and the Resource Recovery Park waste streams. In turn, affecting the range and type of services offered by TCC.

The operation of waste infrastructure and services are often reliant on resource consents. As occurred at Maleme Street Transfer Station, when a facility is unable to meet resource consent conditions, or there is a change in legislation (such as the RMA reforms), this could affect waste operations and services.

Issue 9: Unforeseen events can result in high volumes of waste in a short period

Unforeseen events, such as natural and man-made disasters, and pandemics, apply a different pressure upon waste services and other inter-related services by potentially creating a significant volume of waste, which may be contaminated, in a very short timeframe.

In addition, climate change will result in gradual sea level rise that may require the removal of built structures, including closed landfills, or disrupt waste facilities, that become inundated.

These events can leave adverse legacy effects that can take years to remedy. For example, the earthquakes in Christchurch, the COVID-19 pandemic, and the management of waste following the Rena disaster reemphasise the need for planning. Lessons can be learnt from these events to assist in preparing for future events in Tauranga.

Other issues: Waste movements

We know that waste does not originate and stay in any one district. Rather, the generation, management, and minimisation activities from waste are fluid. It is often generated in one district, then transferred and/or consolidated in another district, before being disposed somewhere else. Waste is also often transferred through districts. For example, the Te Maunga MRF receives recyclable materials from districts as far away as Gisborne. This material is then sorted and processed in Tauranga, before being transported to final destinations in the Waikato and Auckland. With some waste then being sent overseas.

Therefore, sub-regional, regional, cross-regional, and national collaboration is required to manage and minimise waste. This could include, for example, the standardisation of services, joint-partnerships between Territorial Authorities to fund, deliver, and manage waste infrastructure, and the development of waste strategies, policies and plans.

We see this issue as touching all of the issues raised above and therefore, it is not a standalone issue in itself. Introduction

Other issues: Recognition of Te Tiriti o Waitangi (Te Tiriti) or te ao Māori

The 2016 WMMP did not contain any reference to Te Tiriti o Waitangi or te ao Māori. These are notable gaps in modern environmental legislation for Aotearoa, which has been recognised in the Governments proposed Waste Strategy and Legislation.

While TCC has assisted marae with waste management and minimisation initiatives in the past, TCC have

historically had very limited iwi and hapu engagement or Maori perspectives in the development of waste plans, policies, and strategies. We recognise that Aotearoa New Zealand is in a unique position because alignment with the underlying principles of circular economy is already a significant part of te ao Māori. Therefore, we need to take a partnership approach to address the issues identified above. This will ensure that the principles of Te Tiriti o Waitangi are upheld and will enable Māori to shape the activities and actions to meet our proposed waste vision and transition to a circular economy.

6 TCC's strategy

This chapter considers the TCC's direction with regard to vision and targets for achieving waste reduction and for meeting the forecast demand for services.

6.1 Proposed Vision

The proposed vision for the 2022-2028 WMMP is "**reduce waste to landfill**".

This is a slight variation of the vision from the 2016 WMMP, which was "minimising waste to landfill".

In our view, it achieves a number of outcomes including promoting the waste hierarchy, maximising the diversion of waste, and a transition to a circular economy. It is also measurable.

While we considered the option of an ambitious "zero waste" vision, it was decided that in the six year lifetime of this WMMP it was unachievable. However, as part of the broader TCC Strategic Framework Refresh project , TCC is currently proposing a purposely long-term and aspirational vision of a zero waste city. This reflects feedback from the Strategic Framework Refresh workshops that requested that Council is "more absolute about defining success in measurable terms".

A review has also resulted in a streamlined and more focused set of goals and objectives being proposed. The new goals and objectives will provide a sense of direction when scoping options by considering the outcomes desired.

6.2 Proposed Goals and Objectives

Our proposed goals and objectives to meet our vision are set out in Table 10. The order in which they are presented is not a reflection of their importance:

Table 19: Proposed WMMP goals and objectives

Goals	Objectives

Goal 1: Resources are valued	Objective 1: Promote a shift up the waste hierarchy to focus on avoiding and reducing resource use that generates waste, before reusing, recycling, and recovering. Objective 2: Reduce the total quantity of waste disposed to landfill. Objective 3: Measure and report progress against targets.
Goal 2: Facilitate effective and efficient waste management and reduction	Objective 4: Provide everyone in the community with an opportunity to access waste services and infrastructure in a way that is equitable. Objective 5: Reduce contamination within kerbside recycling and organic collections, and in public place recycling bins. Objective 6: Collaborate with local iwi, central government, other councils, businesses, the community, and private waste companies on waste management and reduction initiatives. Objective 7: Investigate, consider, trial, and implement new technologies and service methodologies for efficient waste reduction.
Goal 3: Promote sustainable waste management	Objective 8: Be led by tikanga and mātauranga Māori to adopt a holistic approach in taking responsibility for our waste. Objective 9: Influence and empower the community to take responsibility for their waste. Objective 10: Reduce greenhouse gas emissions associated with waste. Objective 11: Reduce the harmful environmental, societal, and economic impacts of waste.

6.3 Proposed Targets

Despite undertaking a number of actions from the 2016, including the successful rollout of the household kerbside service, we know that the community and Government expects more from us.

This Waste Assessment has identified that there continues to be a high volume of waste that could be diverted from landfill across a variety of waste streams. We also recognise that if we do not take the lead in the waste space, then we will be left behind by the work already underway within our community and by

changes proposed by the Government. Those changes from the Government in relation to the National Waste Strategy and Emissions Reduction Plan are likely to dramatically change how waste is managed in Aotearoa New Zealand. Furthermore, the Government is investing significantly in the waste industry. For example, establishing a $50 million Plastic Innovation Fund to target plastic waste. These initiatives, and the general ambitions of members of our community and the wider waste industry, will drive change.

Therefore, while we have set ambitious targets, we do still believe they are achievable and will result in excellent environmental, social, and cultural outcomes. These will also allow us to lead, rather than follow. It will also enable us to manage costs over a longer period while change is embedded, rather than playing catch up once that change is already in place.

Waste reduction and management targets within the WMMP provide a clear and measurable way to determine how well TCC is achieving its goals. There are a number of waste targets that already exist, which TCC is striving to meet. These are specified in existing TCC waste contracts and the Long Term Plan 2021-2031 (LTP). However, in some instances, and as previously highlighted, reliable data and reporting is an issue in the waste industry due to assumptions and the number of services and facilities.

This means that the targets and key performance indicators from the LTP have not been adopted verbatim as the data utilised to set those focused on volumes of waste and the population across both Tauranga and the Western Bay of Plenty District. For completeness, that target is to reduce the average amount of waste sent to landfill per capita/annum to 450kg by 2024/2025. TCC will review its key performance indicators during the development of the 2024-2034 Long Term Plan. At this time, TCC will endeavour to align the WMMP and LTP targets based on new data and monitoring gathered over the next three years.

MfE have also set targets to the year 2030 for the whole of Aotearoa New Zealand within the proposed National Waste Strategy. Given the foregoing, we have aligned the proposed targets with the targets put forward by the Government in the proposed National Waste Strategy, in which MfE have set targets for the whole of Aotearoa New Zealand. Along with aligning them with existing ones, where possible.

The proposed targets are based on a TCC financial year, being from 1 July to 30 June, and will be for a total period of six years from 1 July 2022 to 30 June 2028.

6.3.1 Proposed Targets associated with the kerbside collection services

Target 1: Reduce waste to landfill from Kerbside Collection Service

The kerbside collection services introduced in July 2021 adopted targets to reduce household kerbside waste to landfill to 150kg/capita/annum in 2023. MfE has also introduced a target, as set out in the Waste Strategy and WMA review consultation document[45] to reduce household waste disposal by 60 – 70% by 2030. Based on the existing baseline of 200kg/capita/annum for kerbside waste only, this would be the equivalent of reducing the household waste disposed to landfill to between 80kg and 60kg/capita/annum, respectively.

As one of the worst performing Councils in Aotearoa New Zealand, in terms of waste being sent to landfill, TCC proposes to adopt an aspirational target that would better the proposed MfE targets. The proposed TCC targets of household waste to landfill are set out in Table 11. The targets reflect that initial reductions may be easier to achieve than in later years.

Table 20: Household Kerbside Waste to Landfill Targets

Year	Household kerbside waste volumes disposed to landfill per annum

[45] Ministry for the Environment. 2021. *Te kawe i te haepapa para | Taking responsibility for our waste: Proposals for a new waste strategy; Issues and options for new waste legislation*. Wellington: Ministry for the Environment.

2022/2023	Reduce household kerbside waste disposed to landfill to 175kg/capita
2023/2024	Reduce household kerbside waste disposed to landfill to 150kg/capita
2024/2025	Reduce household kerbside waste disposed to landfill to 130kg/capita
2025/2026	Reduce household kerbside waste disposed to landfill to 110kg/capita
2026/2027	Reduce household kerbside waste disposed to landfill to 90kg/capita
2027/2028	Reduce household kerbside waste disposed to landfill to 75kg/capita (a reduction of 62.5% from the 2021 baseline of 200kg/capita)

Target 2: Reduce organic food waste from kerbside collection service

As identified in the SWAP surveys, approximately 33% of all household kerbside waste going to landfill is organic food waste. Based on the existing baseline of 200kg/capita/annum of waste disposed to landfill, it is calculated that this is approximately 66kg/capita/annum of food waste being disposed to landfill.

This presents a significant opportunity to divert this waste stream that, in turn, would also reduce the emissions of methane to the environment as this material breaks down in landfills.

The new kerbside collection services introduced in July 2021 adopted targets to recover a minimum of 12,000 tonnes of food waste, in total, by 2024 across Tauranga. This is the equivalent of 4000 tonnes per annum. Based on the amount of food waste collected between July and November 2021, we are expected to exceed 4,000 tonnes in the first year. Therefore, we are proposing targets beyond those already adopted as part of our kerbside rollout.

Of relevance to food waste, MfE has also introduced a target to reduce organic waste going to landfill for the whole of Aotearoa New Zealand, as specified in the Waste Strategy and WMA review consultation document[46]. But this is set as a reduction in biogenic waste methane emissions by at least 30%, rather than a volume of organic waste material and is not specific to food waste. Our targets for food waste recovery would contribute to this reduction in biogenic waste methane emissions.

TCC proposes to adopt an aspirational target to recover the following volumes of food waste recovered in the household kerbside service. The targets reflect that recovery will take a few years to establish as the kerbside service is more widely adopted by the community, before increasing in subsequent years, until there is a diminishing return.

Table 21: Volumes of food waste recovered in the household kerbside service targets

Year	Household food waste volumes recovered via the kerbside service per annum
2022/2023	Recover 4,200 tonnes of food waste per annum (based on recovering approximately 27kg/capita of food waste from a population of 155,925 people)[47]
2023/2024	Recover 5,000 tonnes of food waste per annum (based on recovering approximately 32kg/capita of food waste from a population of 157,675 people)
2024/2025	Recover 5,750 tonnes of food waste per annum (based on recovering approximately 36kg/capita of food waste from a population of 159,049 people)

[46] Ministry for the Environment. 2021. *Te kawe i te haepapa para | Taking responsibility for our waste: Proposals for a new waste strategy; Issues and options for new waste legislation*. Wellington: Ministry for the Environment.
[47] Population projection figures from 'Tauranga City Population and Dwelling Projection Review 2021 (Growth Allocations 2018-2118).

2025/2026	Recover 6,500 tonnes of food waste per annum (based on recovering approximately 41kg/capita of food waste from a population of 160,194 people)
2026/2027	Recover 7,250 tonnes of food waste per annum (based on recovering approximately 45kg/capita of food waste from a population of 162,484 people)
2027/2028	Recover 7,500 tonnes of food waste per annum (based on recovering approximately 48kg/capita of food waste from a projected population of 165,411 people)

Target 3: Improve household kerbside diversion rate

While the introduction of the household kerbside recycling, food waste, and garden waste bins has reduced the potentially recyclable and recoverable waste in the rubbish bins from 65% to approximately 48%, there still remains a high proportion of waste that could be diverted from landfill[48].

Of the 48% of waste in the household kerbside rubbish bins, 12.4% could be recycled. This was made up of 6.1% paper, 2.3% plastics, 0.9% steel cans, 0.6% aluminium cans, and 2.5% of glass bottles and jars. An additional 35.3% of compostable material could be diverted, consisting of 25.9% of organic kitchen waste and 9.5% of garden waste.

TCC proposes to adopt targets to divert these potentially recoverable and recyclable materials from the household rubbish bins. The targets reflect that education and participation (including using the garden waste and food waste bins) will take a few years to establish as the kerbside service is more widely adopted by the community. There is also always likely to be some contamination due to the city being a tourist destination where visitors are unaware of the correct processes.

Table 22: Household Kerbside Recycling Participation Targets

Year	Household kerbside diversion rate per annum
2022/2023	Improve diversion of household kerbside rubbish rates from 48% to 40%
2023/2024	Improve diversion of household kerbside rubbish rates from 40% to 30%
2024/2025	Improve diversion of household kerbside rubbish rates from 30% to 20%
2025/2026	Improve diversion of household kerbside rubbish rates from 20% to 10%
2026/2027	Maintain diversion of household kerbside rubbish rates to no more than 10%
2027/2028	Maintain diversion of household kerbside rubbish rates to no more than 10%

6.3.2 Proposed Targets associated with the Te Maunga Resource Recovery Park

As summarised in section 3.2.1 of this Waste Assessment, TCC is proposing to upgrade the Te Maunga Transfer Station to take the form of a 'Resource Recovery Park'. The upgrade will support the population growth in the area and provide residents and industry with numerous options to recover multiple waste streams from landfill, such as untreated timber, organics, concrete, tyres, e-waste, hazardous waste, construction, and demolition waste. The Te Maunga Resource Recovery Park will also contain a recycling centre, community recovery centre and workshop.

TCC is also proposing to upgrade the Material Recovery Facility ('MRF') with a new optical sorter to reduce

[48] Tauranga City Council SWAP Survey, undertaken by Waste Not Consulting, December 2021.

contamination within its recyclable waste streams.

The contract with EnviroWaste to operate the upgraded facilities includes a targeted reduction in solid waste to landfill from the Te Maunga Resource Recovery Park. This is proposed to be adopted in the 2022 WMMP as below.

Target 4: Reduce waste to landfill from Te Maunga Resource Recovery Park

As the Te Maunga Resource Recovery Park will include upgraded facilities for recycling, a dedicated construction and demolition recovery facility, and a community-led recovery centre, TCC requires that there will be improved diversion of waste from landfill.

TCC proposes to adopt an aspirational target to reduce waste to landfill from the Te Maunga Resource Recovery Park. The targets reflect that diversion may take a couple of years to establish while the facility is fully developed and until the community utilises the activities at the site. It is noted that the Key Performance Indicator contract targets with EnviroWaste were only set for three years in 2022/2023, 2023/2024, and 2024/25, as listed below. Positively, these targets are likely to be exceeded in the first year, due to facility upgrades and the kerbside service rollout.

- 10-20% reduction in 2022/23
- Further 10-20% reduction in 2023/24
- Further 4-5% reduction in in 2024/25
- The targets below are based on the baseline of total volumes of waste being sent to landfill from the Te Maunga Resource Recovery Park, which was approximately 57,500 tonnes in 2020/2021. The targets are also year on year (i.e. the 2023/2024 target is a reduction of 20% of the 2022/2023 volume of waste sent to landfill).

Table 23: Volume of Waste sent to Landfill from the Te Maunga Resource Recovery Park Targets

Year	Reduction of Waste sent to Landfill from the Te Maunga Resource Recovery Park
2022/2023	Reduce waste sent to landfill by 20% per annum (from 57,500 tonnes to between 46,000 tonnes)
2023/2024	Reduce waste sent to landfill by 20% per annum (from 46,000 tonnes to between 36,800 tonnes)
2024/2025	Reduce waste sent to landfill by 5% per annum (from 36,800 tonnes to 34,960 tonnes)
2025/2026	Reduce waste sent to landfill by 5% per annum (from 34,960 tonnes to 33,212 tonnes)
2026/2027	Reduce waste sent to landfill by 5% per annum (from 33,212 tonnes to 31,551 tonnes)
2027/2028	Reduce waste sent to landfill by 5% per annum (from 31,551 tonnes to 29,974 tonnes)

Target 5: Improve recycling of Construction and Demolition waste

As construction and demolition waste is the largest source of waste to Class 1 landfills at 33%[49], this

[49] Ministry for the Environment, Estimates of waste generated in Aotearoa New Zealand, 9 September 2021.

presents a significant opportunity to divert these materials from landfills.

The Te Maunga Resource Recovery Park will include a dedicated construction and demolition recovery facility that will improve the sorting and recycling of construction and demolition waste. As summarised from the SWAP Survey, approximately 500 tonnes per week of construction and demolition waste is sent to landfill from the TCC Transfer Stations. This is the equivalent of 26,000 tonnes per annum. TCC is also aware that approximately 50,000 tonnes of waste was being disposed annually at the Jack Shaw Cleanfill prior to its closure in July 2020.

TCC proposes to adopt an aspirational target to recycle the following volumes of construction and demolition waste sorted at the Te Maunga Resource Recovery Park. The targets reflect that recovery will take a few years to establish as the processing of waste at the new facility is more widely adopted by the construction and demolition, and as the waste disposal levy increases, which will further encourage recycling rather than disposal at landfills. It is noted that the contract targets with EnviroWaste were only set for three years in 2022/2023, 2023/2024, and 2024/25 and these targets are adopted in the table below.

Table 24: Construction and Demolition Waste Recycled at the Te Maunga Resource Recovery Park Targets

Year	Volume of Construction and Demolition Waste Recycled at the Te Maunga Resource Recovery Park per annum
2022/2023	Recover 10,000 tonnes of construction and demolition waste per annum (based on manual sorting and recovery)
2023/2024	Recover 12,500 tonnes of construction and demolition waste per annum (based on manual sorting and recovery)
2024/2025	Recover 30,000 tonnes of construction and demolition waste per annum (based on new construction and demolition plant being commissioned)
2025/2026	Recover 35,000 tonnes of construction and demolition waste per annum
2026/2027	Recover 42,000 tonnes of construction and demolition waste per annum
2027/2028	Recover 50,000 tonnes of construction and demolition waste per annum

6.3.3 Proposed Targets associated with Biosolids

Target 6: Diversion of Biosolids from Landfill Targets

Following the successful vermicomposting trial to divert biosolids from landfill, TCC proposes to adopt aspirational targets to increase the diversion rate of biosolids to 100%. The targets reflect that this change will take a couple of years to establish as research is undertaken, end markets established, and any facility upgrades and/or resource consents obtained.

Importantly, there are numerous opportunities for TCC to divert biosolids from landfill. These include, but are not limited to, fertiliser and soil conditioner for agricultural and forestry land, landfill capping, quarry rehabilitation, and energy / electricity generation. As such, the diversion target may not be solely achieved by sending the biosolids to a vermicomposting facility.

Table 25: Diversion of Biosolids from Landfill Targets

Year	Diversion of Biosolids from Landfill per annum

2022/2023	Divert 50% of biosolids from landfill per annum
2023/2024	Divert 75% of biosolids from landfill per annum
2024/2025	Divert 100% of biosolids from landfill per annum
2025/2026	Maintain diversion of 100% of biosolids from landfill per annum
2026/2027	Maintain diversion of 100% of biosolids from landfill per annum
2027/2028	Maintain diversion of 100% of biosolids from landfill per annum

6.4 Guiding principles

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

- Addressing legislative requirements
- Alignment with the Aotearoa New Zealand Waste Strategy
- Alignment with the WMMP vision 'Minimising waste to landfill'
- Recognition of Kaitiakitanga/stewardship
- Prioritisation of actions based on waste hierarchy
- Allowing for integration of technology/recycling and recovery processes
- Acknowledgement that while behaviour change is required to minimise waste, convenience influences behaviour

6.5 Statement of options for meeting future demand

The following sections consider options that address future demand and the Tauranga-specific issues that have been identified.

In addition to looking at the options, TCC will continue with its current waste minimisation actions (i.e. the status quo) including the kerbside service, operation of waste facilities, and continued support and provision of education and behaviour change programmes. TCC will also continue to support existing waste minimisation and resource efficiency initiatives, advocate to government for change, and collaborate with other councils to promote waste management and minimisation.

For a full list of existing and new actions being put forward following this options review, refer to the 2022 WMMP Action Plan.

6.5.1 Options for addressing Tauranga-specific issues

Table 17 expands on the Tauranga City specific issues listed in section6 and presents options that TCC could introduce to address those issues. The options cover influence, regulation, and service provision options, which are then assessed for alignment with the vision, goals and objectives, costs, and ease of implementation. A preference to proceed is provided in the last column. TCC will consult on these options through the public consultation of the draft WMMP in March 2022.

Table 26: Options for Tauranga City specific issues

Issue	Description	Approach	Options	Aligns with vision, goals, and objectives	Cost	Ease of implementation	Commentary (advantage and disadvantages)	Preferred?
Households								
Issue 1: The way we currently consume products leads to large quantities of waste	Our population continues to grow alongside record levels of consumption, which largely focus on a 'take-make-dispose' system. A fundamental shift in how we live and do business is required.	Influence	a) Provide information to the community, focusing on reduction within the waste hierarchy.	High	Low	Relatively simple	Focusing on reducing the quantity of waste is the first step in the waste hierarchy, after avoiding unnecessary waste by designing it out of the system in the first place. While TCC cannot directly change how our community consumes goods and services, we can provide education to change behaviours. We can provide educational material at appropriate locations (including supermarkets, TCC offices/facilities, website, at local events, etc.) to inform and educate the community on reducing waste by buying products that have zero-waste or waste that is easily diverted from landfill (i.e. compostable or recyclable).	Yes
Issue 2: There is a high volume of household waste going to landfill that could be diverted	The volume of waste disposed to landfill that is collected from household kerbside services in Tauranga has maintained steady at, or about, 200 kg/capita/year for the last six years. Based on the SWAP audit in December 2021, approximately 50% of all household kerbside waste could still be diverted. There is also a high volume of household waste, including food and garden waste, eWaste, construction and demolition materials, and other waste streams that could be diverted from landfill.	Influence	a) Provide information to the community on how to responsibly dispose of all waste streams.	Medium	Low	Simple	Behaviour change and education programmes are an on-going approach that TCC uses, particularly in conjunction with any new initiatives or changes to the way a service is to be provided. This will align with the upgrade of the Te Maunga Resource Recovery Park as the community will be able to recycle and recover additional waste streams, such as eWaste and other hard to recycle items. Provision of educational material at appropriate locations (including supermarkets, TCC offices/facilities, website, at local events, with rates information etc.) is a low-cost option to inform and educate the community on positive waste minimisation behaviours. One of the key things that is proposed is to have a comprehensive list of all ways a household and the commercial sector can dispose of all waste streams. TCC presence at public events, galas, and less traditional opportunities will be explored with positive messaging and taking a more marketing approach to communicating the goals and making it real to people living and working in the city. TCC will also utilise apps and social media to promote correct recycling presentation and encourage waste diversion behaviours. This will include investigating, considering, trialling, and delivering, if practicable, a public education facility at the Te Maunga Resource Recovery Park.	Yes
		Regulate	b) Restrict/ban specific types of waste in kerbside collection bins and within the landfill pit at the Te Maunga Resource Recovery Park.	Medium	High	Complex	While simple in theory, this option will have compliance/monitoring costs that may result in significant investment in time and resource for TCC for limited improvement in landfill diversion. This is because the source of the non-compliance, at the kerbside, will be difficult to determine with the certainty required to enable infringement notices/fines to be issued. Private collectors and TCC already have a 'ban' on liquids, hot ashes, hazardous wastes and medical waste as part of the existing bylaw and contracts. Formalising any extension to this and ensuring compliance for both private collectors and TCC could be complex. There will be high costs associated with the drafting of the appropriate policy/bylaw, consultation, hearings and socialisation of such a ban.	No. But further analysis and consultation to occur.
		Service	c) Monitor provision of kerbside services, including recycling, glass,	High	High	Simple	The glass service began in October 2018 and the remaining contracts began in July 2021. Ongoing monitoring of participation rates and waste assessments of the kerbside service is needed to ensure success. Waste assessments will include SWAP surveys and contamination reporting at the Resource Recovery	Yes

Issue	Description	Approach	Options	Aligns with vision, goals, and objectives	Cost	Ease of implementation	Commentary (advantage and disadvantages)	Preferred?
			food waste, and garden waste				Parks and MRF. This will also involve the TCC contamination officer continuing to inspect kerbside bins for contamination and providing education as required. TCC will undertake surveys of the community to ensure the service is acceptable.	
			d) Monitor provision of differential pricing for rubbish and recycling bin sizes and garden waste collection frequency	High	High	Relatively complex	The provision of differential pricing for bin sizes for kerbside rubbish and recycling services and frequency of garden waste collection is intended to encourage diversion of waste from landfill. Ongoing monitoring of the effectiveness of the pricing and frequency options will be necessary to determine if they are increasing diversion.	Yes
			e) Develop Community-led Recovery Centre at Te Maunga Resource Recovery Park	High	High	Relatively complex	Investigate, consider, trial, and deliver, if feasible, a Community-led Recovery Centre.	Yes
			f) Continue providing targeted public place rubbish and recycling bins	Medium	Medium	Relatively simple	Provision of additional or replacement rubbish and recycling bins will be targeted at high impact areas. e.g. near service stations, shops, supermarkets, outside schools and in locations that will encourage use of the facilities (households, business, and tourists).	Yes
Issue 3: The proportion of our community living in multi-unit dwellings is growing	Approximately 10% of TCC's households live in multi-unit developments and this is expected to grow. Particularly with recent legislative changes being proposed by Government to increase housing supply. Access and storage restrictions at multiple-unit dwellings mean that TCC are unable to offer standard kerbside services to all of these premises, but still want to be able to offer the range of services to these customers as elsewhere in the city.	Influence	a) Develop and provide bespoke education package and information to the community who reside in MUDs on how to responsibly dispose of all waste streams to encourage diversion and accountability	Medium	Low	Simple	Tailored education that is unique to the type of buildings that customers reside in will encourage accountability and also provide feedback that can be used to design future services and planning requirements. It is considered a low-cost option to inform and educate the community on positive waste minimisation behaviours.	Yes
		Regulate	b) Include waste storage areas and collection points in planning requirements for new MUDs	High	Medium	Relatively complex	Investigate what requirements would work best, including whether changes are required to the City Plan, Infrastructure Development Code, Building Consent requirements, and Bylaw.	Yes
		Service	c) Monitor and modify, if necessary, bespoke MUD kerbside services	High	High	Complex	Monitor ongoing implementation of TCC's bespoke kerbside services for MUDs and investigate improvements in delivery of these services and how they are funded.	Yes
Businesses and Organisations								
Issue 4: Businesses and organisations need better services to divert waste from landfill	The SWAP data shows that readily recoverable dry recyclables, construction and demolition waste, organic material and re-usable items are disposed of at both TCC Transfer Stations. An unknown proportion of this waste comes from businesses and organisations. This includes waste from small and medium	Influence	a) Provide information and develop a targeted education package specifically for SMEs	Medium	Medium	Relatively simple	Education and information sharing is an on-going approach that the TCC uses, particularly in conjunction with any new initiatives or changes to the way a service is to be provided. Tailored communication and education with a focus on the needs of SMEs would help.	Yes
		Regulate	b) Continue differential pricing at the Te Maunga Resource Recovery Park	Medium	Medium	Relatively complex	This is currently in place and motivates the majority of users to divert materials; however, some make the choice not to spend time sorting waste in order to save money.	Yes

Issue	Description	Approach	Options	Aligns with vision, goals, and objectives	Cost	Ease of implementation	Commentary (advantage and disadvantages)	Preferred?
	enterprises, such as, not for profit, community organisations, early childhood centres, and schools. Currently, these enterprises either engage private waste collection services or dispose of their waste directly at the two TCC provided Transfer Stations. There is an opportunity to develop more services for businesses to divert and dispose of their waste either at kerbside or at the Te Maunga resource recovery park.	Service	c) Upgrade Resource Recovery Park at Te Maunga Transfer Station including the Community-led resource recovery facility	High	High	Complex	Concept planning for the upgrade of the Te Maunga Resource Recovery Park is underway. This includes establishing a Community-led resource recovery facility. Further consideration and delivery of what services would be valuable to SMEs is appropriate.	Yes
			d) Provide glass recycling service to SMEs	High	High	Complex	TCC could provide a domestic kerbside rubbish collection service to businesses inside their services area. Business needs, especially SMEs, vary when it comes to solid waste, organics and recycling. Consultation with the business community would be required to understand those differing needs and identify appropriate options in response such as the option to opt-in to a domestic-type collection or TCC offering a more bespoke service to businesses, like it currently does for MUDs. Investigate whether TCC should provide these services and how it would be funded and delivered.	Yes
			e) Provide recycling service to SMEs	High	High	Complex		Yes
			f) Provide organic waste collection service to SMEs	High	High	Complex		Yes
Construction and Demolition Waste								
Issue 5: There is a high volume of construction and demolition material going to landfill	The SWAP survey completed in February and March 2020 identified that 18% of all waste to landfill by weight disposed of at the two Transfer Station was construction and demolition waste. Previously, it is likely that this waste was being disposed of locally at the Jack Shaw cleanfill facility prior to its closure in July 2020. Therefore, TCC did not have accurate records and data of the volume of construction and demolition waste being disposed within our city. There is now an opportunity to engage and educate the construction and demolition industry to ensure they operate as high up the waste hierarchy as possible, but firstly reducing waste generation, before re-using or recycling waste at the upgraded Te Maunga resource recovery park.	Influence	a) Proactively collaborative with industry to change behaviours via education and promotion of waste minimisation.	Medium	Low	Relatively simple	TCC is already engaging with other Territorial Authorities across Aotearoa, as well as private industry operators, on managing and minimising construction and demolition waste. Working across the city and region will have benefits in reducing construction and demolition waste. Waste minimisation activities such as waste separation, recycling of materials and beneficial reuse can be promoted.	Yes
			b) Support the use of technology/events to sell/re-use construction material	Medium	Low	Relatively simple	Supporting external technology products and events is a low cost way for TCC to influence diversion knowledge and habits.	Yes
		Regulate	c) Introduce Bylaw prohibiting disposal of certain construction and demolition material in landfill and cleanfills	Medium	High	Complex	Would possibly lead to an increase in illegal dumping. Appropriate alternative disposal facilities would need to be provided before this option could proceed. This aligns with the upgrade of the Te Maunga Resource Recovery Park, which include a specific construction and demolition recovery facility. The quantum of the problem of construction and demolition waste being sent to landfill would need to be quantified in order to determine whether the level of effect/benefit is commensurate with the high costs to develop the bylaw, undertake consultation, hearings and socialisation of the final bylaw if adopted. This option would have compliance/monitoring costs that would need to be funded.	No. But further analysis and consultation to occur.
			d) Support regional cleanfill regulation	Medium	High	Relatively complex	The size of the problem would need to be quantified in order to determine whether the level of effect/benefit is commensurate with the high costs to develop regulations, undertake consultation, hearings and socialisation of the final regulations if adopted. This option would have compliance/monitoring costs that would need to be funded.	Yes
			e) Change TCC building standards to include sustainable practices	High	Medium	Complex	Investigate what could be included in the building standards and consult with industry.	Yes. But further analysis and consultation to occur.

Issue	Description	Approach	Options	Aligns with vision, goals, and objectives	Cost	Ease of implementation	Commentary (advantage and disadvantages)	Preferred?
			f) Advocate for national building code to include sustainable practices	Medium	Medium	Relatively simple	TCC should aim to provide resources towards initiatives for legislative change at a national level, working alongside others.	Yes
		Service	g) Establish facilities for construction and demolition material sorting and recovery at Te Maunga Transfer Station	High	High	Relatively complex	Significantly increases opportunities for diversion and the range and quality of diverted materials however major capital works are required. Requires operation and maintenance of a complex sorting line and management of markets for a larger quantity of diverted material.	Yes
			h) Establish reuse/upcycle facility at Te Maunga Resource Recovery Park for construction and demolition waste	High	High	Relatively complex	Investigate whether TCC should provide this service and how it would be funded and delivered.	Yes
			i) Provide land and facilities at Te Maunga for building deconstruction	High	High	Relatively complex	Investigate whether TCC should provide this service and how it would be funded and delivered.	Yes
Biosolids								
Issue 6: Disposing of biosolids to landfill affects cultural, environmental, social, and economic values	The disposal of biosolids needs to change. Recent vermicomposting trials have been successful in diverting up to 100% of biosolids from landfill. But we are reliant on private companies and resource consents to continue with this method. There are numerous opportunities for TCC to divert biosolids from landfill that need further investigation and trials.	Influence	a) Work with the Bay of Plenty Regional Council to ensure future consent conditions are suitable	High	Medium	Relatively simple	TCC should proactively communicate with the regulator to ensure that they can prepare and respond to any proposed new requirements at the two wastewater treatment plants.	Yes
		Service	b) Investigate options and end markets, and implement where feasible, opportunities that will divert biosolids from landfill	High	Medium	Complex	The vermicomposting trial has been successful in diverting biosolids from landfill. As costs increase for disposal of waste at landfills, new and innovative opportunities will arise for diverting biosolids from landfill. These need to be investigated and then implemented to divert 100% of biosolids as this is likely to be more cost effective than disposing at landfill as well as supporting sustainability and the circular economy. However, uncertainty remains until such time as such opportunities and facilities will likely need resource consents and new technology will be required.	Yes
All Waste								
Issue 7: Litter and illegal dumping, which has environmental and financial costs, is increasing	Litter and illegal dumping arise due a number of reasons including, a lack of waste infrastructure and services, costs, behaviour, and accidents. Although each act of littering or illegal dumping is usually, but not always, small in scale, it is a problem that has a huge environmental cost. Additionally, the budget for monitoring, maintaining, cleaning, and enforcement action undertaken by TCC and other organisations continues to grow. This places additional stress and financial costs on our city's ratepayers.	Regulate	a) Review bylaws to make sure they are consistent with national legislation	Medium	Low	Complex	Bylaw reviews are required periodically and changes to industry regulation will inform the review. This will need to focus on how TCC monitors and enforces any changes to reduce illegal dumping.	Yes
		Influence	b) Provide information to the community on how to responsibly dispose of all waste streams.	Medium	Low	Simple	Behaviour change and education programmes are an on-going approach that TCC uses, particularly in conjunction with any new initiatives or changes to the way a service is to be provided. This could include additional signage at known illegal dumping locations.	Yes
		Service	c) Review and implement changes around public bins, parks and reserves, and other known illegal dumping locations.	Medium	High	Complex	Investigate and implement activities that will reduce littering and illegal dumping. This could include, for example, smart technology that records illegal dumping and littering activities. Which makes it easier to monitor and enforce. Review and implement changes to public bins and within parks and reserves where litter occurs. This could see, for example, removing bins entirely so that "accidental littering" cannot occur.	Yes

Issue	Description	Approach	Options	Aligns with vision, goals, and objectives	Cost	Ease of implementation	Commentary (advantage and disadvantages)	Preferred?
Issue 8: Cost and volume uncertainty has risen due to legislation change or service interruption	Significant national regulation changes are occurring within this WMMP planning cycle. These changes will have a significant impact upon the activities that are undertaken by Councils throughout Aotearoa New Zealand. In addition, the existing increases in the Waste Disposal Levy and an increase in price and reduction in availability of NZ Units in the ETS will drive the cost of disposal to landfill upwards.	Influence	a) Advocate for changes, providing a Tauranga perspective	Medium	Low	Relatively complex	TCC should aim to provide resources towards initiatives for legislative change at a national level, working alongside others.	Yes
		Regulate	b) Review bylaws to make sure they are consistent with national legislation	Medium	Low	Complex	Bylaw reviews are required periodically and changes to industry regulation will inform the review.	Yes
			c) Obtain alternative funding streams	High	Low	Relatively complex	Investigate whether grant funding is available to offset the cost of new and improved facilities, services that reduce waste to landfill.	Yes. But further analysis and consultation to occur.
		Service	d) Introduce diversion services and facilities to minimise the cost impact	High	High	Complex	Investigate which services TCC should provide and how they would be funded and delivered.	Yes
Issue 9: Unforeseen events can result in high volumes of waste in a short period	Unforeseen events, such as natural and man-made disasters, and pandemics, apply a different pressure upon waste services and other inter-related services by potentially creating a significant volume of waste, which may be contaminated, in a very short timeframe. In addition, climate change will result in gradual sea level rise that may require the removal of built structures, including closed landfills, or disrupt waste facilities, that become inundated.	Service	a) Establish/update an incident response plan as part of Business Continuity Plan to include for waste services.	High	Low	Complex	Resilience and business continuity planning is critical in the ability for TCC to deal with the on-going provision of waste services in the event of major service disruption. This will require working collaboratively with other Councils and waste service and facility providers to ensure that any unforeseen events will not result in significant disruptions or long-lasting environmental and community effects. The work should include investigating and establishing additional disposal areas that could be used temporarily for storing, diverting and processing waste, including hazardous substances and/or contaminated land. This may require additional resource consents and investments, but such facilities may not sit within the Tauranga district. It should also include a crisis communications plan to identify how TCC communicate with the community in these events.	Yes
		Service	b) Review the criticality and resilience of Resource Recovery Parks assets and other facilities (e.g. closed landfills) and adopt operation, maintenance and renewal strategies as appropriate	High	Low	Relatively simple		Yes
		Service	c) Analysis and prepare for future temporary waste disposal or processing facilities if access to one or more facilities becomes unavailable and investigate residual capacity.	High	High	Complex		Yes
		Influence	d) Collaborate with other councils for a national, regional, and sub-regional approach and discuss disaster response plan with Bay of Plenty Regional Council.	Medium	Low	Complex		Yes

7 Statement of Proposals

Based on the options identified in this Waste Assessment and the Councils' intended role in meeting forecast demand, a range of proposals have been put forward. The full suite of actions and timeframes for delivery of these proposals will be identified in the draft 2022 WMMP. However, in summary, TCC proposes for the 2022-2028 WMMP to continue providing the following current waste services in Tauranga:

- Council provided kerbside rubbish, recycling and organic collection, processing and disposal
- Litter bin servicing and illegal dumping collection
- Ongoing monitoring and management of closed landfills to ensure that resource consent conditions continue to be met, and
- Education programmes to drive waste minimisation behaviour change.

It is expected that the implementation of the proposals will meet forecast demand for services as well as support our vision, goals, objectives and targets for waste management and minimisation.

8 Statement of Extent

In accordance with section 51(f) of the WMA, a Waste Assessment must include a statement about the extent to which the proposals will (i) ensure that public health is adequately protected, (ii) promote effective and efficient waste management and minimisation.

8.1 Statement of Protection of Public Health

The Health Act 1956 requires the Councils to ensure the provision of waste services adequately protects public health.

TCC provides waste services and facilities, as described in section 3 of this Waste Assessment. This is alongside additional private industry services and facilities. These combined services and facilities adequate access to council and private rubbish, hazardous waste and illegal dumping/ litter collection services to ensure that public health is adequately protected in the future. However, TCC recognises that further service improvements and waste minimisation is achievable and proposes new and improved initiatives in the draft 2022 WMMP.

In coming to this conclusion, TCC has consulted with the Medical Officer of Health by providing a copy of the draft Waste Assessment. Their response is included in full in section 10 of this Waste Assessment. It is noted that they support the vision and overall strategic direction proposed. However, they have identified several matters for TCC to address in our 2022 WMMP, including:

- A review of facilities, particularly as only one Resource Recovery Park (Te Maunga) is now publicly accessible in Tauranga.
- Taking a sub-regional approach to managing waste alongside Western Bay of Plenty District Council.
- Development of clear objectives, methods, and performance measures with "reasonably progressive targets". This should include behaviour change targets alongside waste volume targets.

- To be reassured that public health is protected they would like to see information that demonstrates whether all households in Tauranga receive kerbside collected waste and waste diversion services. As well as data on how all the waste generated by its community is disposed of.
- Review multiple options and sites for managing biosolids to provide flexibility and allow TCC to retain control of this waste stream.
- An assessment of activities to reduce waste generated from emergency events and also prepare TCC council to safely manage waste from these events.
- Deliver waste services and infrastructure in a way that is affordable and accessible to everyone no matter where they live in Tauranga.
- Ensure that residents within MUDs are provided with the same waste diversion service opportunities as all residents in Tauranga.
- Consider regulating a minimum footprint of all urban properties, not just MUDs, to ensure there is sufficient space for managing diverted materials and waste on site.

TCC acknowledge these matters raised and will address them within the draft 2022 WMMP to ensure public health is protected.

8.2 Effective and Efficient Waste Management and Minimisation

The preferred options, as described in section 7.5 of this Waste Assessment, are recommended to support TCC in meeting future demand for waste management and minimisation services and infrastructure in the city for at least the next six years. This includes significant investments in our Resource Recovery Parks and education programmes to drive behaviour change.

Therefore, it is considered that the proposals would promote effective and efficient waste management and minimisation.

9 Medical Officer of Health statement

The initial draft Waste Assessment was provided to the Medical Officer of Health at Toi Te Ora Public Health on the 23rd June 2021. A response was received on the 14th October 2021 and is included in full below.

As advised by the Medical Officer of Health, waste management is important for the health of the public. If not disposed of properly, waste can present a health hazard through physical injury, chemical poisoning, exposure to infectious material and encouraging pests such as vermin, flies, and mosquitoes. Waste can also block stormwater systems, contaminate land and water, and create odours.

While the Medical Officer of Health supports the vision and overall strategic direction proposed, they raised several matters for TCC to address that would ensure that public health would be protected. Following a review of the response, TCC updated the initial draft Waste Assessment to the document presented in this report. In our view, this addressed a number of the concerns and gaps raised within the letter from the Medical Officer of Health.

Based on this, we consider that we have achieved the outcomes sought by the Medical Officer of Health that to ensure public is protected, TCC provides and supports waste services and infrastructure in ways that do not increase the risk to health, are affordable, and are accessible to everyone no matter where they live in

the city.

LETTER TO BE INSERTED