

**Te arotakenga o te tōtika o
te utu whakawātea para**
Review of the effectiveness of
the waste disposal levy

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This document may be cited as: Ministry for the Environment. 2024. *Review of the effectiveness of the waste disposal levy*. Wellington: Ministry for the Environment.

Published in September 2024 by the
Ministry for the Environment
Manatū mō te Taiao
PO Box 10362, Wellington 6143, New Zealand
environment.govt.nz

ISBN: 978-1-991140-33-3 (online)

Publication number: ME 1844

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Executive summary and recommendations

This review was carried out to meet the obligation in the [Waste Minimisation Act 2008 \(WMA\)](#) for the Minister to review the effectiveness of the waste disposal levy (levy) every three years.

The levy is established under the WMA. It is a tool to reduce waste being disposed of in landfills, and to encourage alternative approaches to producing, using and managing products and materials at their end of life.

This review covers the period of the 2019/20 financial year to the 2021/22 financial year (ie, 1 July 2019 to 30 June 2022). In reviewing the levy, the Minister must consider whether the amount of waste disposed of in Aotearoa New Zealand has decreased and whether the amount of waste reused, recycled or recovered in Aotearoa has increased since the last review.

A levy has been in place at municipal landfills (those that accept waste from households) since 2009. In 2020, a range of improvements to the effectiveness of the levy were made, drawing on the results of previous reviews of the levy. These changes include expanding the coverage and increasing the rate of the levy, as well as introducing associated reporting requirements.

Implementation of these changes was not complete by the end of this review period (the final increases to the levy for municipal and construction and demolition landfills will take effect from 1 July 2024). However, this review draws some preliminary conclusions and offers further recommendations.

Available data show a slight decrease (2.25 per cent) in quantities of waste disposed of in municipal (class 1) landfills since the last review period. Available data also show a possible increase in material reused, recycled or recovered over the period, although data limitations do not allow for a comprehensive analysis.

This report also considers changes made to Ministry for the Environment systems and processes for investment of the levy and for compliance, monitoring and enforcement associated with collecting and administering the levy.

Recommendations

In order to support continued effective management of the levy, the recommendations are as follows.

- Continue ongoing efforts to ensure strategic investment of levy revenue by both central and local government.
- Ensure waste legislation better supports administration, collection and investment of the levy.
- Review whether relative levy settings for class 1 and class 2 landfills contribute to any unintended outcomes, and if so whether changes to levy settings or other provisions are required (such as changes in relative levy rates or restrictions on materials that can be disposed of at class 2 landfills).

- Clarify the intended scope of the levy and reporting obligations (through regulatory change proposals, or as part of the legislative change process in the previous recommendation).
- Consider options for better understanding and management of rural wastes.
- Consider how future levy reviews are conducted, including involvement of the Waste Advisory Board in agreeing the scope for the review, and the potential for non-statutory annual reviews to supplement the three-yearly formal review.

Background

The waste disposal levy is a tool to minimise waste

The waste disposal levy (levy) is established under the [Waste Minimisation Act 2008](#) (WMA). It is a tool to reduce waste being disposed of in landfills, and to encourage alternative approaches to producing, using and managing products and materials at their end of life.

A levy has been in place at municipal landfills (those that accept waste from households) since 2009. More recently, levies have also been established for other landfill types.

Half the levy money goes to territorial authorities (city and district councils) to spend on promoting or achieving the waste minimisation activities set out in their waste management and minimisation plans. The remaining levy money (minus administration costs) is invested in projects to promote or achieve waste minimisation. These projects are generally funded through the Waste Minimisation Fund (WMF) and the Plastics Innovation Fund (PIF).

The Minister is required to assess the effectiveness of the levy every three years. This review covers the period of the 2019/20 financial year to the 2021/22 financial year (ie, 1 July 2019 to 30 June 2022). In reviewing the levy, the Minister must consider:

- whether the amount of waste disposed of in Aotearoa New Zealand has decreased since the last review (see [Trends in waste disposal](#) section)
- whether the amount of waste reused, recycled or recovered in Aotearoa has increased since the last review (see [Trends in reuse, recycling and recovery](#) section).

The Minister may also consider any other matters they think relevant (see [Achieving waste minimisation through investment of the levy](#) and [Discussion](#) sections).

Information sources include the Online Waste Levy System (OWLS), which includes tonnage reporting and other information from landfills and other sites; published reports; and internal information, such as investment information.

In preparing this review, the Minister has also obtained and considered the advice of the Waste Advisory Board, as required under the WMA.

Reuse, recycling and recovery

The WMA defines these terms as follows:

Reuse means the further use of waste or diverted material in its existing form for the original purpose of the materials or products that constitute the waste or diverted material, or for a similar purpose.

Recycling means the reprocessing of waste or diverted material to produce new materials.

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.

Key changes to the levy were made in 2020

Following a preliminary review of the effectiveness of the levy in 2019 (Ministry for the Environment, 2019), a range of changes were made to improve its effectiveness in 2020, including:

- progressively increasing the levy rate for municipal landfills from \$10 per tonne to \$60 per tonne (as of 1 July 2024)
- expanding the levy to cover additional landfill types, including construction and demolition fills
- collecting data from a wider range of waste sites, including cleanfills and transfer stations
- investing the additional revenue from the levy in initiatives that support waste reduction.

These changes are summarised in table 1. Additional information on facility types is outlined in the subsequent text boxes.

Table 1: Levy rates and coverage

Landfill class	Date levy applies from				
	1 July 2009	1 July 2021	1 July 2022	1 July 2023	1 July 2024
Municipal landfill (class 1)	\$10	\$20	\$30	\$50	\$60
Construction and demolition fill (class 2)	-	-	\$20	\$20	\$30
Managed or controlled fill facility (class 3 and 4)	-	-	-	\$10	\$10

Types of landfill subject to the waste disposal levy

Municipal disposal facility (class 1) means a facility, including a landfill, that accepts for disposal waste that is or includes household, commercial, industrial or institutional waste, green waste, or waste that is not accepted at other classes of facilities.

Construction and demolition fill disposal facility (class 2) means a facility, including a landfill, that accepts waste that is or includes solid waste from construction and demolition activity. This could include materials such as wood products, asphalt, plasterboard, insulation, and other construction and demolition materials.

Managed or controlled fill disposal facility (class 3 or 4) means a facility that accepts any one or more of the following for disposal:

- inert waste material from construction and demolition activities
- inert waste material from earthworks or site remediation.

Other facilities (not subject to waste disposal levy)

These facilities are subject to record-keeping and reporting obligations but do not have to pay a levy. This provides the Ministry for the Environment with further information about waste quantities and movements.

Cleanfill facility (class 5) means a facility that accepts for disposal only virgin excavated natural material. Cleanfill material is material that, when buried, will have no adverse effect on people or the environment. It includes virgin natural 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 substances
- products or materials derived from hazardous waste treatment, hazardous waste stabilisation or hazardous waste disposal practices
- materials that may present a risk to human or animal health, such as medical and veterinary waste, asbestos or radioactive substances
- liquid waste.

Industrial monofill facility means a facility that accepts for disposal waste that discharges or could discharge contaminants or emissions and is generated from a single industrial process (for example, steel or aluminium making, or pulp and paper making).

Transfer stations are facilities that contain a designated receiving area where waste is received, and from which waste (or any material derived from that waste) is transferred to a final disposal site or elsewhere for further processing. Transfer stations do not provide long-term storage for waste or material derived from that waste.

Further changes to record-keeping and reporting regulations were made in September 2023 to support these improvements, including requirements for:

- territorial authorities to report annually on what they spent their levy funds on, and what waste minimisation services, facilities and activities they have provided (from 1 July 2024)

- waste sites to report the type of activity that generated the waste they are handling/disposing of (eg, waste from households, construction and demolition) (from 1 July 2024)
- improvements to the conversion factors used to convert volume-based measures of waste to tonnages (for sites that do not have access to a weighbridge).

The Ministry has improved how it collects, administers and invests the levy

Alongside the changes to the rate and coverage of the levy, supporting changes have been made to Ministry for the Environment (Ministry) processes for collecting and administering the levy, and for its investment.

Investment

As noted above, some of the levy is distributed to territorial authorities to spend on waste minimisation, and some is invested by central government for that purpose. The Ministry currently administers two related waste minimisation funds using levy money, as outlined in table 2.

Table 2: Levy funds administered by the Ministry for the Environment

Fund	Purpose	Process for applications
Plastics Innovation Fund (PIF)	<p>The PIF was launched in November 2021 and closed in 2023. The PIF supported projects that will minimise plastic waste and its harm on the environment. It aims to invest \$50 million of levy revenue over four years in innovative projects to find ways to:</p> <ul style="list-style-type: none"> • use less plastic • introduce circular solutions • reduce imported virgin plastics • improve end-user behaviour. 	<p>The PIF was designed to be applicant-centric and strategically aligned. Key features of the PIF process are that it:</p> <ul style="list-style-type: none"> • provided applicants with interactive pre-application support, including webinars, videos and one-on-one meetings to discuss potential projects and their alignment to PIF criteria • allowed applicants to respond to feedback in their final submissions • offered agile decision-making, aligned to clear objectives • provided review, assessment and moderation, combined with access to a pool of internal and external subject-matter experts • ran eight-month funding rounds, each with a specific focus • was a contestable and competitive process. <p>After introduction of this approach for the PIF, a similar approach was made standard for the WMF as well, although the WMF operates year round.</p>
Waste Minimisation Fund (WMF)	<p>The WMF supports projects that increase reuse, recovery, and recycling; decrease waste to landfill; or tackle single-use items or litter. The goal is to:</p> <ul style="list-style-type: none"> • accelerate system level change – supporting initiatives that change 	<p>The WMF follows the same approach as the PIF, namely to:</p> <ul style="list-style-type: none"> • shift from short funding rounds to an ‘always open’ model • focus on initiatives that make the greatest impact (including increased minimum grant sizes (\$50,000 for research and development,

<p>the way we create and manage waste</p> <ul style="list-style-type: none"> • shift attitudes and behaviours higher up the waste hierarchy – changing the behaviours of individuals and organisations is essential to achieve waste minimisation goals • protect the environment from harm, including greenhouse gas emissions – to reduce emissions from waste, without causing environmental harm in other ways • increase reuse, recycling and recovery of resources – providing support for resource recovery facilities and investment in capital infrastructure, to support reuse and recycling. 	<p>business cases or innovation projects, and \$150,000 for all other project types)</p> <ul style="list-style-type: none"> • clear investment signals and eligibility criteria so applicants know if they are likely to be successful.
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Recent improvements to how the funds are administered are outlined in table 3. Implementation of these changes started during the review period, although some are ongoing.

Table 3: Changes to how the Ministry for the Environment administers waste minimisation funds

Change from:	To:	Benefits
Ad hoc projects	Strategic programmes	<ul style="list-style-type: none"> • Stronger focus on high impact and scale and stronger alignment to key outcomes • Ability to strategically fund an integrated portfolio across projects funded by the levy and the Climate Emergency Response Fund
High ratio of small-scale projects	Greater focus on larger, high-impact projects	<ul style="list-style-type: none"> • Resources are focused on the biggest 'bang for buck' • Improved efficiency • Lower risk of under-delivery and mismanagement of funds
Reactive application process	Proactive pipeline building	<ul style="list-style-type: none"> • Greater ability to partner • Greater ability to influence the mix of applications
Low participation of some sectors	Wider pool of investors, including Māori	<ul style="list-style-type: none"> • Greater ability to leverage private sector capital, including Māori businesses • Higher participation of high-impact investors • Wider community reach
Minimal interaction with applicants	Strong focus on pre-application support	<ul style="list-style-type: none"> • Improved stakeholder experience • Higher quality applications
Generic processes	Tailored models	<ul style="list-style-type: none"> • Improved stakeholder experience • Greater ability to use mechanisms that are most likely to result in the best outcome
Annual funding round	On-demand model	<ul style="list-style-type: none"> • Improved stakeholder experience • Flexibility to adjust signals over the year • Eliminates bottlenecks

An additional change is the introduction of an online funds-management system across all waste funds. The software is designed to streamline data collection and reporting. It allows applicants to apply through an online portal and report directly on active projects.

A waste investment panel was established in 2022/23 to provide strategic assessment for large applications to both the WMF and PIF and make recommendations to the Ministry (Ministry for the Environment, 2023a). Typically, the panel considers applications requesting funding of \$1 million or more. It may also be asked to consider complex or higher-risk applications below that threshold.

Compliance, monitoring and enforcement

The Ministry has adopted a range of policies and procedures for its role in collecting and administering the levy, including:

- a compliance, monitoring and enforcement strategy (Ministry for the Environment, 2021a), which sets out the Ministry's approach to compliance monitoring and enforcement under the WMA and explains how the Ministry achieves compliance and interacts with regulated communities
- an enforcement decision-making policy (Ministry for the Environment, 2021b), which sets out the scope and procedure for making enforcement decisions under the WMA and related regulations
- a prosecutions policy (Ministry for the Environment, 2021c), which sets a framework for making decisions about the use of prosecutions under the WMA.

These documents are supported by additional internal guidance, including a WMA Investigations Manual and a WMA Communications and Engagement Strategy 2020.

The Ministry has also begun reporting annually on its compliance monitoring and enforcement responsibilities under the WMA. Its inaugural report was published in December 2021 (Ministry for the Environment, 2021d), and a second report (covering the period 2021/2022) was published in December 2022 (Ministry for the Environment, 2022a). Highlights of the 2021/22 report are outlined in the box [Case study: compliance monitoring and enforcement](#).

Case study: Compliance monitoring and enforcement

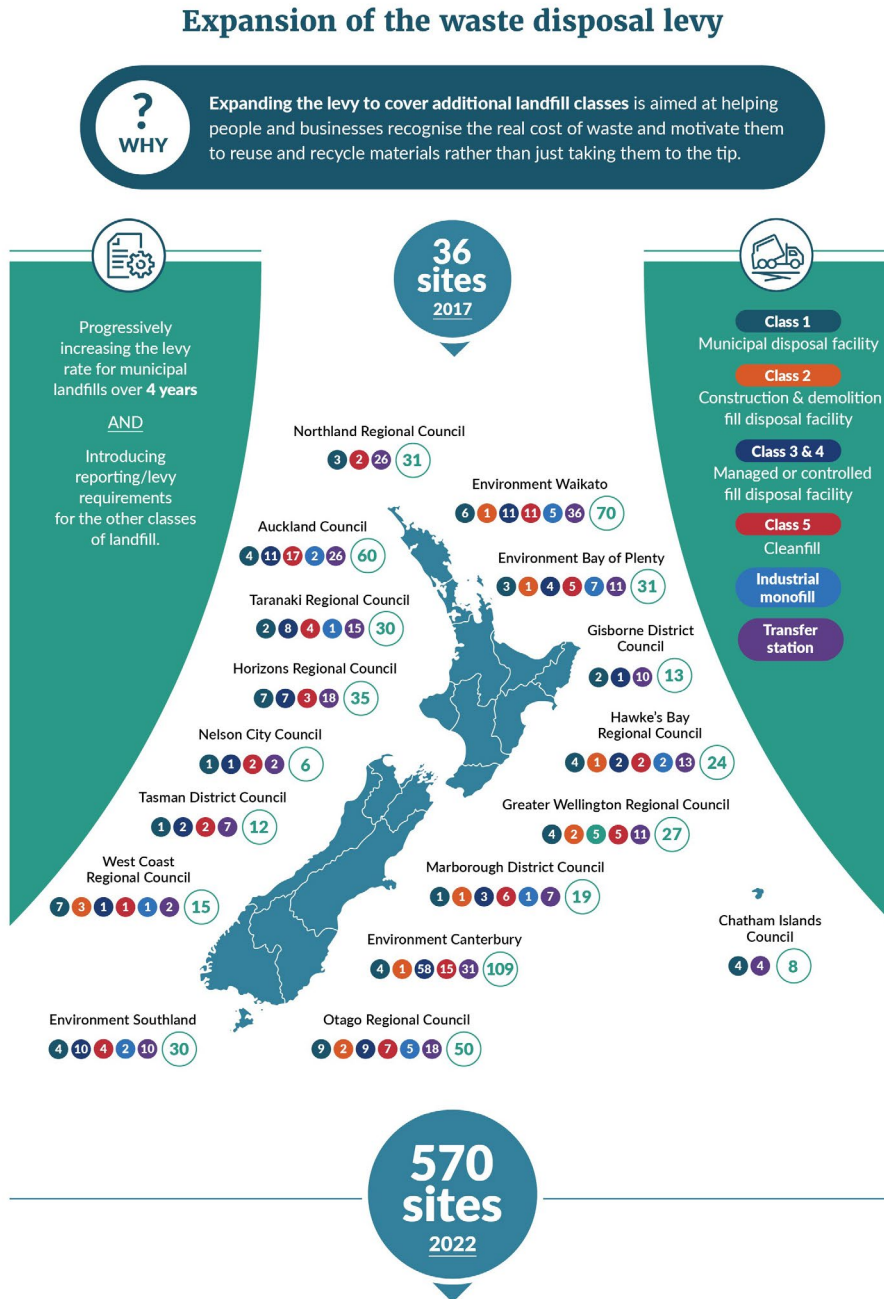
During the 2021/22 reporting period (1 July 2021 to 30 June 2022), the Ministry conducted 51 formal audits spanning 3 distinct auditing programmes (disposal facilities, territorial authorities, and funding recipients), responded to more than 1,000 enquiries, and launched three new investigations across disposal facilities and territorial authorities.

Enquiries increased significantly, with the team responding to hundreds of calls and emails. Most enquiries were from operators wanting to understand more about how the levy expansion affected them. The sector has generally welcomed the Ministry's refreshed approach to compliance, and the Ministry continued building effective relationships with operators, councils and the wider public.

Significant outcomes for the 2021/22 reporting year include:

- expansion of the levy to more facilities, increasing the rates for facilities already paying the levy and expanding the suite of regulatory obligations to monitor and enforce (see figure 1 below for a map of landfill sites and other regulated parties)
- upgrade of the OWLS to better support the administration of the waste levy
- launch of an Alleged Breach Notification System, which makes it easier for the public to let the Ministry know about behaviour of concern
- release of the Territorial Authority Waste Levy Expenditure System (TAWLES) to provide a user-friendly online portal for councils, replacing a previous manual process
- building on a baseline of compliance data established in 2020/21, enabling the Ministry to shift to a more intelligence-led, risk-based model, deploying available resources to areas of greatest risk or concern
- improvement to guidance material, building improved channels for public engagement, and supporting new members to the regime via the waste levy expansion.

Figure 1: Expansion of the waste disposal levy and associated reporting requirements from 2017 to 2022 and the number of classes per region (as at December 2022)



Findings

The changes to the levy and associated data provisions are being progressively implemented, which means it is difficult to ascertain their full impact in reducing waste disposal and increasing reuse, recycling and recovery since the last review of the levy. This report will look at the available information on trends and provide some commentary and preliminary findings.

Trends in waste disposal

There have been small reductions in both total net tonnage (table 4) and per capita waste disposal to class 1 facilities (table 5) since the last review period.

Table 4: Total gross, diverted and net tonnages of waste at levied waste disposal facilities (class 1 facilities) for the 2020 and 2023 review periods

	2016/17 to 2018/19	2019/20 to 2021/22	Difference	% change
Total gross tonnage	11,439,902	11,349,537	(90,365)	(0.80%)
Total diverted tonnage	784,252	928,846	144,594	+15.57%
Total net tonnage	10,655,650	10,420,691	-234,959	(2.25%)

Source: Reported returns from the OWLS.

Note: Years reported are financial years (ie, the period 2016/17 is from 1 July 2016 to 30 June 2017). Note that disposal facility operators may amend their reports up to two years after submitting them, so figures may be subject to slight change.

Table 5: Net kilograms of waste per capita disposed of at municipal landfills (class 1) for the 2020 and 2023 review periods

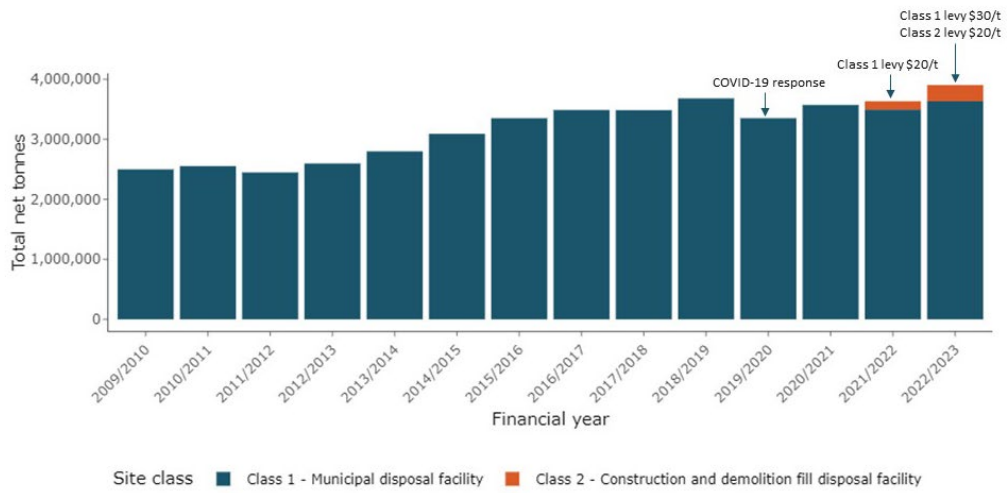
	By time period	Average for time period	% change between periods
Per capita waste disposal 2016/17 to 2018/19	2016/17 – 731.1	730.8 kg/capita	-6.6%
	2017/18 – 716.7		
	2018/19 – 744.5		
Per capita waste disposal 2019/20 to 2021/22	2019/20 – 664.4	682.6 kg/capita	
	2020/21 – 699.9		
	2021/22 – 683.4		

Source: Reported returns from the OWLS.

Note: Years reported are financial years (ie, the period 2016/17 is from 1 July 2016 to 30 June 2017). Note that disposal facility operators may amend their reports up to two years after submitting them, so figures may be subject to slight change. Per capita figures are based on the quarterly estimated resident population data from Stats NZ.

Since 1 July 2022, construction and demolition landfills (class 2) have also been subject to a levy; from 1 July 2023, controlled and managed fills (class 3) were also included. Future reports will include trends for those landfill types. Figure 2 includes a longer time series of both class 1 and 2 disposals. Looking over a longer time period, there has been substantial growth in waste disposal to municipal landfills between 2009 and 2018, and a levelling off with no strong trend since then (although a slight reduction since the last review period). A slowdown of economic activity associated with the response to the COVID-19 pandemic may have contributed to the decrease in waste disposal in 2019/20.

Figure 2: Total tonnage of waste disposed of at levied landfills (2009/10 to 2022/23)



Note: Class 1 landfills have been subject to a landfill since 1 July 2009. Class 2 facilities have been subject to reporting obligations since 1 January 2022, and to a levy since 1 July 2022. The 2021/2022 year therefore includes only 6 months of data for class 2 facilities (January to June 2022).

How tonnages are measured and recorded

Gross and diverted tonnage

Gross tonnage is the total tonnage of waste and diverted material (eg, recyclables) that enters the facility.

Diverted tonnage is the tonnage of material that enters the facility as gross tonnage but is either reused or recycled or removed from the facility within six months.

The six-month timeframe for diverted materials does not apply for transfer stations, industrial monofills, or cleanfills. All diverted tonnage must be measured, even if it is stockpiled on site. For transfer stations, diverted tonnage means material that is sent to be reused or recycled.

Net tonnage is the gross tonnage minus the diverted tonnage.

Tonnages can be measured using:

- a compliant weighbridge
- an offsite weighbridge
- conversion of the volume of waste into tonnage using approved conversion factors
- an average tonnage system (in some cases), in which facility operators may weigh a sample of the vehicles delivering waste to the disposal facility and calculate an average weight of waste carried for specific types of vehicles.

The WMA requires disposal facility operators to keep the original records of the tonnages of waste and diverted material. These records are used when the Ministry audits a disposal facility. It is an offence under the WMA for a disposal facility to fail to keep accurate records.

The measurements are also included in the monthly or annual returns a disposal facility operator provides to the Ministry. The Ministry uses these returns to calculate the levy owed by a disposal facility operator.

More information is available on the Ministry's factsheet *Waste levy – Measuring waste tonnages*.

Trends in reuse, recycling and recovery

No comprehensive data are available to assess whether the amount of waste reused, recycled, or recovered in Aotearoa has increased since the last review. This report considers available information sources, which provide a snapshot rather than a time series. Over the review period, the Ministry commissioned three reports considering national-level recycling volumes (see table 6), as described below.

- Eunomia (2018) *National Resource Recovery Project – Situational Analysis Report*. The Ministry commissioned this report from Eunomia Research & Consulting to consider the impact of initiatives to restrict imports, made by a key importing country for Aotearoa New Zealand's recycling (known as China National Sword/Blue Sky initiatives).

The report provided an overview of the recycling sector in Aotearoa, a summary of the international impact of the import restrictions, and a review of the impact within Aotearoa. The report considered commercial and domestic sources of materials, and compiled information supplied in confidence during interviews with sector participants. The report compiled data from 2017 and was released in September 2018.

- Eunomia (2021) *Waste and Resource Recovery Infrastructure and Services Stocktake – Summary Report* and Eunomia (2023) *Waste and Resource Recovery Infrastructure and Services Stocktake and Gap Analysis – Full Project Summary Report*. These reports were prepared for the Ministry in 2020 and 2021 to collate information on the waste and resource recovery infrastructure and services provided in Aotearoa, and to make recommendations for their future development. They include a summary of waste and resource recovery infrastructure in Aotearoa (as of 2020), broken down by primary material streams.

These reports considered a wider range of material streams, not all of which were covered in the 2018 report. They also featured more in-depth interviews across a wider range of participants, so could potentially have identified additional resource recovery activity (however, it is hard to determine whether the increase in recovery between the 2018 and 2021 report relates to an increase in real terms, an increase in reporting, or both).

Table 6: Annual tonnage of recycled commodities for Aotearoa New Zealand, from 2018 and 2021 reports

Recycling commodity	Eunomia (2018) (tonnes)	Eunomia (2021) (tonnes)
Paper and cardboard	480,000	550,000
Plastics	45,000	55,006
Ferrous metals (iron and steel)	560,000	605,000
Non-ferrous metals (aluminium, copper, lead, alloys, and other less common metals)	50,000	67,183
Glass	160,000	156,917 ^{1,2}
TOTAL	1,295,000	1,434,106

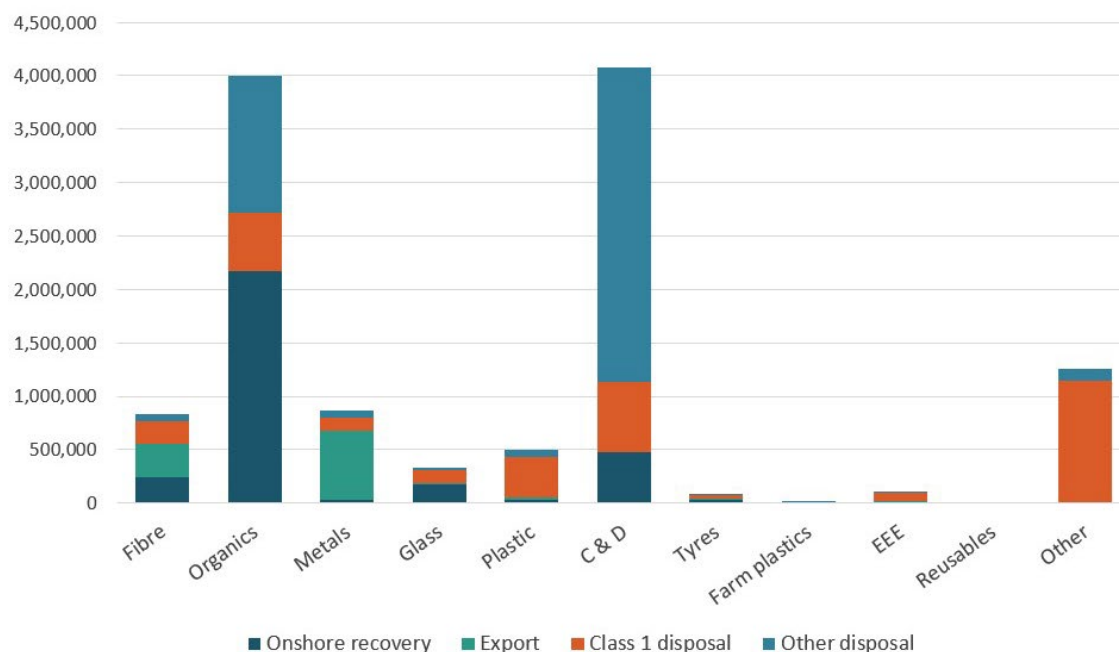
Note: tonnages include both commercial and household sources of recycling, and materials processed onshore, as well as those exported for recycling offshore.

The 2021 and 2023 reports also contained information on a wider range of recovered materials. Overall, the stocktake work was able to identify approximately 12 million tonnes of material that reaches end of life in Aotearoa annually. A breakdown of this material is shown in figure 3.

¹ This figure includes glass recycled (into bottles, etc – 120,452 tonnes), as well as that used in aggregate (17,142 tonnes) and other uses (such as filter media, sand – 21,012 tonnes). It is unclear if this wider range of uses is included in the figure reported in the 2018 report, which does not provide a detailed breakdown. This figure does not include flat glass (eg, from windows), for which the 2021 report estimates an additional 35,000 tonnes is collected annually.

² The Eunomia (2021, 2023) reports note there are some discrepancies between data commissioned during investigations into a potential container return scheme for Aotearoa (which show total glass of 278,613 tonnes for 2019 – including 250,113 tonnes of beverage container glass and a further estimated 28,500 tonnes of non-container glass) and data from the Glass Packaging Forum, a voluntary product stewardship organisation for the glass packaging sector (which estimated the 2019/20 figure to be 256,923 tonnes of glass to market).

Figure 3: Estimated tonnes of material recovered and disposed of in Aotearoa in 2020



Source: Eunomia (2023).

Note: 'Other' includes textiles, sanitary paper, and special wastes which were not included in the stocktake. Overall onshore recovery accounts for 23 per cent (2.8 million tonnes) of all material managed. Other disposal includes class 2 to 5 landfill disposal, on-farm disposal, and system losses. C & D = construction and demolition.

Since 1 January 2022, transfer stations have been required to report on tonnages of materials they receive and send on (either for disposal or to reuse, recycling or recovery). These preliminary data provide some additional information on materials being sent for recycling.³

Table 7 shows material received into transfer stations (either of unspecified origin, or broken down by the type of activity that generated the material). Where specified, residential is the most common origin (ie, material generated by domestic use and dropped off directly to the transfer station). This may reflect the role of transfer stations as an alternative to kerbside collection in smaller or more remote areas.

Table 8 shows the quantities of material leaving transfer stations, by type of material where this is specified. These tonnages are lower than the figures Eunomia (2018, 2023) gave for recycling. This reflects that, for many recycling commodities, the majority is collected from businesses rather than households, or by kerbside collections from households (and so is less likely to be reflected in transfer station statistics).

³ Note, however, that not all material goes via a transfer station – for example, materials picked up from households in a kerbside collection would typically go to a materials recovery facility rather than a transfer station. Similarly, recycling collected from businesses would not generally go via a transfer station.

Table 7: Reported quantities of waste material received by transfer stations and the activity that generated the waste (where stated) (for the 2022 calendar year)

Return period	Residential	Construction and demolition	Kerbside collection	Commercial and industrial	Landscape waste	Special waste	Unspecified
Jan-Mar	260,514	73,694	67,060	38,004	29,869	101	820,981
April-Jun	457,420	68,194	70,256	40,105	24,280	120	1,015,807
Jul-Sep	213,346	69,179	56,914	49,059	29,688	136	796,039
Oct-Dec	41,552	73,708	58,168	40,916	25,817	144	626,673
TOTAL	972,832	284,775	252,398	168,084	109,654	501	3,259,500

Source: Reported returns from the OWLS.

Note: Reporting by activity source (ie, the activity that generated the waste) is currently optional. It will become mandatory from 1 July 2024.

Table 8: Reported quantities sent by transfer stations to recycling or disposal (tonnes) (where specified) (for the 2022 calendar year)

Return period	Organic	Ferrous metal	Glass	Non-ferrous metal	Paper	Plastic	Potentially hazardous	Rubber	Rubble	Textiles	Timber
Jan–Mar	70,127	50,286	14,551	763	9,586	3,532	117	571	17,545	39	14,104
April–Jun	80,210	26,654	12,891	1,166	11,455	4,041	120	208	18,711	30	26,276
Jul–Sep	45,143	18,608	12,339	1,949	10,340	9,731	121	2,357	28,658	36	14,187
Oct–Dec	36,307	15,462	12,792	891	8,657	2,971	146	120	22,321	52	11,710
TOTAL	231,787	111,010	52,573	4,769	40,038	20,275	504	3,256	87,235	157	66,277

Source: Reported returns from the OWLS.

Case study: Reuse

Waste prevention and reuse

Eunomia (2023) estimated that New Zealanders use around 2.3 billion single-use beverage containers a year, many of which subsequently end up in landfills or enter the natural environment. Most operators of reusable schemes have not been in business long enough to establish accurate waste prevention data, with the exception of two longer-term operating providers.

- Conservative estimates are that reusable glass bottle providers, with a combined fleet of 30.1 million bottles, prevent around 100.5 million single-use containers from being manufactured and entering Aotearoa New Zealand's waste recovery system per year.
- Most of this prevention occurs in Auckland (16.7 million items), followed by Canterbury (15.6 million items).
- Of the 30.1 million total, 30 million items are provided by a single operator (ABC), which provides 'swappa crate' beer bottles.
- Six reusable cup schemes, with an estimate fleet size of 563,000, are expected to collectively prevent 4.7 million single-use cups from being manufactured and going on to enter Aotearoa New Zealand's waste streams.

Blumhardt (2022) also provided an overview of reusable packaging systems in Aotearoa, along with examples of such systems in operation across a range of sectors, including:

- hospitality, tourism and accommodation
- beverages
- construction
- groceries
- personal care and cleaning products
- transit/transport packaging.

Both worldwide and in Aotearoa, however, reusable packaging constitutes a small proportion of the overall market share of packaging. Sectors that have historically been leaders (such as the beverage industry) continue to see an ongoing downward trajectory in their use of reusable packaging (Wilcox and Mackenzie, 2021).

Case study: Recovery

Recovery as defined in the WMA includes extraction of materials or energy from waste or diverted material for further use or processing, and includes making waste or diverted material into compost. Elsewhere, composting is sometimes defined as a form of recycling. This case study considers recovering energy from waste materials.

Eunomia (2023) presented analysis of the biofuel energy potential from different waste sources (such as wood waste that currently goes to landfill, crop residues, municipal biosolids, forestry residues and manures). This analysis identified forest harvest residues as the largest potential source of waste materials (although this is not material that currently goes to landfill).

Energy recovery could take a number of forms, including the following.

- **Biogas:** The Bioenergy Association suggests there is significant potential for growth in the production of biogas from residual organic wastes from food processing, waste water treatment facilities and dairy effluent if supplemented with other organic material (Eunomia, 2023, pp 129–130).
- **Liquid biofuels:** Liquid biofuels are substitutes for liquid fossil fuels and include biodiesel, bioethanol and bio-oils. Current use in Aotearoa is very limited (less than 0.1 per cent of total liquid fuel sales) (Eunomia, 2023, p 130).
- **Wood waste and solid fuels:** Wood biomass (primarily from forestry slash and, to a lesser extent, sawmill by-products) is the most commonly used biofuel in Aotearoa (Eunomia, 2023, p 130). Eunomia (2023) estimated such biomass to supply in the order of 8.5 per cent of total energy supply, based on figures in Ministry of Business, Innovation & Employment (2020). Waste tyres are also a potential energy source. In 2021, Golden Bay Cement completed a project (supported with \$16 million of funding from the WMF) that will avoid up to three million used tyres going to landfill each year. The tyres are instead used as a tyre-derived fuel in the cement plant, reducing coal and iron sands use, and associated emissions (Fletcher Building, 2021).
- **Energy from residual waste:** there is no large-scale incineration or other form of energy generation from mixed waste in Aotearoa at present, although there have been, and continue to be, a number of efforts to establish such facilities.

Achieving waste minimisation through investment of the levy

Investment outcomes

The purpose of imposing a levy on waste disposed of in landfills is to increase the cost of waste disposal, to recognise that disposal imposes costs on the environment, society and the economy; and to raise revenue for promoting and achieving waste minimisation. Both central and local government invest the levy to promote and achieve waste minimisation, and the outcomes achieved by that investment are an important component of the overall effectiveness of the levy.

Within this review period (covering the 2020 to 2022 calendar years), 51 projects were funded by the WMF, with a total of over \$20.2 million in funding approved for 46 organisations.

Additional third-party funding of over \$16.5 million was unlocked with this investment. For the PIF, 7 projects were funded, with a total of over \$7.6 million in funding approved for 7 organisations (since the fund opened in November 2021). The types of projects funded by both funds are outlined in table 9.

Table 9: Summary of WMF and PIF funding (2020 to 2022)

Project type	WMF		PIF*	
	Count	Value	Count	Value
Community	7	\$1,113,946		
Data collection and analysis	1	\$80,000		
Education and awareness	3	\$737,892		
Services	8	\$2,464,201		
Feasibility or investigative review	12	\$2,411,151		
Innovation			4	\$1,261,558
Infrastructure	20	\$13,446,741	3	\$6,349,631
Total	51	\$20,253,931	7	\$7,611,189

* PIF data for one year only (2021/22) – PIF first opened in November 2021.

Projects funded through the WMF and PIF between 2020 and 2022 range from smaller-scale projects (less than \$100,000) such as pilot studies and feasibility studies, to multi-million-dollar infrastructure investments. The overall distribution of investments is outlined in table 10. Table 11 shows examples of how investments have supported a range of strategic priorities and work programme initiatives.

Table 10: Spread of investments by funding amount (PIF and WMF, 2020 to 2022)

Funding quantum	Number of projects funded	Total funding in this category
Less than \$100,000	14	\$877,904
\$100,000 to \$249,999	15	\$2,496,174
\$250,000 to \$499,999	11	\$3,883,545
\$500,000 to \$999,999	12	\$8,891,414
\$1 million +	6	\$11,716,083

Table 11: Examples of how funded projects have supported strategic priorities and work programmes

Strategic priority / work programme component	Examples of funded projects
Supporting development of regulated product stewardship schemes	<ul style="list-style-type: none"> • Auto Stewardship New Zealand Limited: seeking to establish a product stewardship scheme for e-waste large batteries (over 5 kilograms). • Agrecovery Foundation: trialling its regulated product stewardship scheme for farm plastics before the scheme is rolled out nationally. The scheme will require producers, brand owners, importers, retailers and consumers to take responsibility for collecting and dealing with farm plastics. • Co-design of Plastic Packaging Priority Product Stewardship Scheme(s) for Aotearoa: a multi-stakeholder co-design of accreditation-ready plastic packaging scheme(s) for all plastic packaging used for consumer goods at retail or wholesale level. • Tyrewise: implementation of regulated product stewardship scheme for end-of-life tyres to become launch-ready.
Implementation of National Plastics Action Plan – contributing to action plan	<ul style="list-style-type: none"> • Pinehurst Associates: developing additional biodegradable bio-based formulations for nursery pots that degrade in soil and under home composting conditions, and manufacturing and market-testing 50,000 pots in agricultural and horticultural sectors. • Again Again Limited: extending a technology platform that enables companies to loan and track reusable packaging such as coffee cups and food containers. • Kaipaki Dairies: substantially increasing their capacity to supply milk in reusable containers, allowing the removal of the equivalent of more than 1 million single-use plastic milk bottles a year from 2025. • Recycle South: a plastics pelletiser plant-expansion project. The plant washes polyethylene and polypropylene plastics from the lower South Island, including agricultural bale wrap. • Marley NZ Limited: increasing collection and processing ability for HDPE and PVC pipes, in partnership with Unitec and Waste Management. This will minimise plastic waste going to landfill in the construction and demolition industry, by investing in new sorting, washing and shredding capabilities in both North and South Island.
Emissions reduction plan – organic waste (also supports objectives of preventing food waste and supporting communities)	<ul style="list-style-type: none"> • Whanganui Kai Hub: a collaborative partnership project working to address organic food waste within the community, supporting the transition from food poverty to kai sovereignty. The project will support the fit-out of a centralised place to redistribute food waste, share nourishing meals and provide a space for people to attend educational workshops that create a waste-free Whanganui. • Nelson Environment Centre: developing a customised facility to distribute a greater quantity of rescued food to more people in need. The fit-out and renovations will enable Kai Rescue to expand operations and divert an estimated 25 per cent more food waste from landfill and, in turn, address the negative impact of organic waste in landfill and the associated greenhouse gas emissions resulting from decomposition.

	<ul style="list-style-type: none"> • Waikato Regional Council: research project focusing on circularising organics. The research project is broken into three parts looking at the whole chain and, when added together, aim to provide a pathway for a robust circular loop for organics. Feedstocks include residential food scraps and green waste, as well as industrial sources such as agriculture and horticulture. • Queenstown Lakes District Council: helping to establish local community composting hubs to help reduce organic waste to landfill, working with community groups and the hospitality sector. • EnviroWaste Services Limited: investing in de-packing equipment to increase capacity to de-package food waste. De-packaged food waste can be further processed into useful products like compost. • BioRich Limited: expanding its two commercial composting sites, which handle the bulk of organic waste in Hawke’s Bay, to compost an additional 12,000 tonnes of organic waste per annum.
<p>Reducing construction and demolition waste</p> <p>(also supports emissions reduction plan actions)</p>	<ul style="list-style-type: none"> • Porirua City Council: two projects, to first prepare a business case and then deliver a resource recovery park at Spicer Landfill. The park will host three waste diversion facilities, including a specialist construction and demolition processing and diversion facility to service Porirua and process localised material from hubs in Hutt City and the Kāpiti Coast. • Mercury Bay Resource Recovery Centre: community-led construction and demolition waste processing facility, to be established on the Thames-Coromandel District Council’s new transfer station site. • New Plymouth District Council: establishing a commercial and industrial materials recovery facility in Taranaki (ie, a facility that receives, separates and prepares recyclable materials). • Nelson City Council: investing in infrastructure to undertake a pilot programme to divert timber and plasterboard waste from construction and demolition sites. • Northland Waste Limited: establishing a wood waste recovery operation for the purposes of shredding and converting wood waste to biofuel. • Central Environmental Limited: establishing a construction and demolition waste processing facility in the Manawatū, to accept materials from demolition contractors, construction companies and waste management companies, and provide an alternative to landfill disposal. • Buller District Council: developing a coordinated regional waste recovery network for construction and demolition waste across the West Coast. • EnviroWaste Services Limited: establishing a permanent wood waste recycling facility to support the building and construction sector in the Auckland/Tauranga/Hamilton regions, diverting wood waste from landfill and processing it for use as biofuel.
<p>Improving kerbside recycling and resource recovery networks</p>	<ul style="list-style-type: none"> • Xtreme Zero Waste: upgrading its facilities with a recyclables processing building, recyclables processing equipment and organics composting equipment, to establish a Centre of Excellence at the Raglan Resource Recovery Centre. • Mackenzie District Council: improving current waste practices by diverting kerbside organic waste from landfill by distributing 240 litre organics wheelie bins to properties within the district’s kerbside collection area, with organic waste being processed into usable compost (also supports emissions reduction plan work). • Chatham Islands Council: optimising the layout of transfer stations and providing signage to encourage use; facilitating collection and handling of recyclables by having suitable receptacles and providing a permanent facility for storing reusable materials for use by the community.

	<ul style="list-style-type: none"> • WasteCo NZ Limited: enhancing sorting operations at its new Sort Centre through the establishment of an automatic sort line, moving from hand sorting on the floor to conveyor sorting. • Bin Hire Co: installing an automated sort line for sorting mixed waste bins, as well as developing and implementing an educational programme for marae.
Improving Māori participation	<ul style="list-style-type: none"> • Ōrākei Hapori Parakore (Ōrākei Community Zero Waste): running a one-year data and awareness project on waste reduction within their rohe (area) by collecting data through waste audits and surveys, raising awareness through workshops and wānanga, and developing an organisational waste strategy. • Para Kore Marae Incorporated: <ul style="list-style-type: none"> – supporting Te Whānau-ā-Apanui towards its zero waste ambitions through co-designing and implementing waste minimisation strategies in the 12 tribal hapū in the eastern Bay of Plenty region, establishing the infrastructure and behaviour set to transform the tribal rohe into a low-waste-generating district. – working with six Ngāi Tahu rūnaka (tribal council) and hapū to co-design and implement strategies to eliminate waste and hiring three new kaiārahi (leadership) positions to establish a regional presence in and around Christchurch, Dunedin and Invercargill.

Changes to investment processes include collection of more data on anticipated and actual outcomes of funded projects. A [waste investments snapshot](#) is now available on the Ministry website, which includes information on forecast diversion of tonnes of organic waste and forecast emissions reduction (relevant metrics for the current focus of funding). Additional information on funded projects is also available in a searchable [project database and map](#).

Territorial authorities invest in waste minimisation

Half the money collected through the levy is paid to territorial authorities quarterly each year. The amount of levy each territorial authority receives is determined by the number of people in each district.

Waste management and minimisation plans prepared by each territorial authority set out how the levy will be used. Territorial authorities must spend the levy to promote or achieve waste minimisation and in accordance with their waste management and minimisation plans.

With increases to the quantity of levy money territorial authorities receive, the Ministry has provided some additional guidance on its website on how territorial authorities could use their levy money.

Territorial authorities report to the Ministry annually on what they have spent their levy revenue on. This is currently on a voluntary basis through the TAWLES, which was launched on 22 April 2022. From 1 July 2024, territorial authorities are subject to mandatory record-keeping and reporting requirements, with the first report (covering the 2024/25 financial year) due by 30 September 2025.

Territorial authorities invest levy funds in a wide variety of projects and activities. Common investments include services such as kerbside recycling, and education and communication (see table 12). The levy spend areas in this review period are similar to the long-term trend (overall, 45 per cent of levy revenue has been spent on services and 25 per cent on education and communication over the time series).

Table 12: Reported spending areas for territorial authorities' share of levy funds

Spending area	Proportion of total spend Amount (%)		
	2019/20	2020/21	2021/22
Services	\$10,177,426 (50%)	\$7,837,385 (45%)	\$6,929,833 (50%)
Education and communication	\$4,993,240 (24%)	\$5,706,722 (33%)	\$3,545,406 (25%)
Infrastructure	\$1,968,712 (10%)	\$1,430,248 (8%)	\$572,798 (4%)
Research and reporting	\$664,041 (3%)	\$773,815 (4%)	\$595,411 (4%)
Other initiatives	\$2,617,472 (13%)	\$1,703,491 (10%)	\$2,304,968 (17%)
Total spend	\$20,420,891	\$17,451,661	\$13,948,417

Source: TAWLES.

Note: Not all levy revenue received by councils is spent in any given financial year; levy revenue may be accrued to spend on larger projects. Dataset includes 66 out of 67 territorial authorities in 2019/20, 65 out of 67 in 2020/21

and 48 of out 67 in 2021/2022. The decreased reporting from territorial authorities in 2021/2022 is due to a change in data collection method and therefore comparison of absolute values is not recommended.

Reported spending areas align well with the work programme priorities identified in table 11. Not all spending is attributable to a specific waste stream or category (ie, projects may target a range of material types). For the portion of funding that can be attributable to a specific waste stream, projects targeting organics (such as household food waste) received the most funding within the review period, with other priority areas, including plastics and priority products (such as e-waste and agrichemicals), also receiving funding.

The results of audits of territorial authorities' spending of levy revenue are outlined in annual regulatory performance monitoring reports (Ministry for the Environment, 2021d, 2022a).

Discussion

Domestic policies can support waste reduction and recycling – but it remains strongly influenced by global conditions

Table 13 outlines a range of factors that have influenced reuse, recycling and recovery in this review period. Key factors include:

- restrictions on exports of certain types of recycling commodities from key trading partners
- impact of the COVID-19 pandemic
- increasing standardisation of domestic recycling
- changing public attitudes and beliefs
- supporting policies and measures, including the waste reduction work programme and emissions reduction plan actions.

Table 13: Factors influencing Aotearoa New Zealand recycling between 2020 and 2023

Factor	Potential impact on recycling	Likely impact on recycling quantities
Trends in international recycling markets	<p>A significant amount of the collected recyclable materials in Aotearoa is currently exported. China used to be the main market for over 50 per cent of the world’s recycling, which included receiving waste and recyclables from Aotearoa. However, since the implementation of China’s National Sword policy,⁴ recyclable commodities, such as plastic, have had to find new markets. These are now exported to south-east Asian countries, including Vietnam, Indonesia, Thailand and Malaysia. China’s National Sword policy has impacted what can be recycled, as well as prices and quality standards for materials.</p>	Reduction
COVID-19	<p>The onset of the COVID-19 global pandemic led to some immediate, short-term impacts on domestic recycling in Aotearoa, including:</p> <ul style="list-style-type: none"> • an inability for some local authorities to continue kerbside recycling due to concerns about exposure to the virus • increased contamination in co-mingled wheelie bins in some local authority areas, leading to the discontinuation of sorting during the lockdown period • an initial lack of overseas markets for fibre (paper/cardboard) due to overseas mills closing, followed by an increase in demand due to mills that continued operating becoming short of material • a shortage of glass at Visy’s beneficiation (pre-treatment) plant and at the glass re-processor O-I Glass • increased volumes in kerbside recycling, organics and rubbish collected during the lockdown period (WasteMINZ, 2020). <p>Alongside these shorter-term impacts related to the immediate effects of COVID-19 and the response to it (such as lockdowns), additional short- to medium-term impacts include the following.</p> <ul style="list-style-type: none"> • instability of supply chains, shipping delays and/or capacity challenges. 	Mixed

⁴ China’s National Sword policy, announced in February 2019, included bans on certain types of recyclable waste and a strict maximum contamination standard of 0.5 per cent. The policy led to the removal of the largest recycling market in the world for low-value mixed plastics (eg, resin types 3 (PVC), 4 (low-density polyethylene), 6 (polystyrene) and 7 (other)).

	<ul style="list-style-type: none"> • Use of certain types of plastics increased, such as masks, takeaway containers, and consumer goods packaging, alongside a drop in the costs of virgin plastic relative to recycled plastic (linked to the cost of oil) (Brock, 2020). • Plastics use declined in the early stages of the pandemic, in line with reduction in demand and output, although the reduction was substantially smaller than the decline in overall economic activity (ie, the plastics intensity of the economy increased, on average). In some sectors, such as healthcare, plastics use increased significantly. The pandemic also resulted in significant disruptions to plastics recycling, due to the temporary halting of some recycling collections, a temporary shift to single-use plastics, disruptions to waste plastic trade, and a temporary loss of competitiveness for recycled plastics (linked to the low price of oil and resulting low prices for primary plastics) (OECD, 2022). • Government investment in resource recovery infrastructure increased, through the COVID-19 Response and Recovery Fund.⁵ 	
Increasing standardisation of domestic recycling	In 2020, sector organisation WasteMINZ prepared a report for the Ministry that provided recommendations on opportunities to standardise domestic kerbside collections of waste in Aotearoa, to increase consistency, reduce confusion for householders, improve material quality and reduce residual rubbish to landfill (WasteMINZ, 2020). The report identified a lack of consistency across the country in the types of materials collected and the way they are collected. Extensive discussions were carried out with waste/recycling re-processors, collectors and sorters (such as materials recovery facility operators), as well as local government, to reach agreement on a standardised national approach. Some of the recommendations could be achieved voluntarily. For example, a number of councils have stopped collecting lower-value plastic types. The Ministry subsequently consulted on, and is partway through, implementing a range of proposals to achieve standardisation (Ministry for the Environment, 2022b, 2023b).	Increase
Public attitudes and beliefs	In 2023 the Ministry funded research to understand and track changes in people’s attitudes, awareness and behaviours around waste minimisation (AK Research and Consulting, 2023). This initial research (which will be repeated for the next three years) found that: <ul style="list-style-type: none"> • people are doing a good job at recycling and are mostly putting the right items into recycling bins • the most frequent recycling and reusing behaviours are ‘using reusable bags when shopping’ (81 per cent); ‘recycling waste at home’ (72 per cent); ‘carrying a reusable water bottle’ (58 per cent) (AK Research and Consulting, 2023, p 5) 	Possible increase

⁵ An initial funding allocation of \$124 million was made, for a range of resource recovery infrastructure solutions to divert and process recyclable or recoverable products such as food organics, fibre, plastics and construction and demolition materials. Allocation was also made for installation of weighbridges at landfills and resource recovery sites. Of the initial projects identified for investment, not all proceeded to a funding arrangement. To date, 30 projects have been funded, totalling \$62.6 million.

- the majority of people (72 per cent) say that they actively try to reduce waste (AK Research and Consulting, 2023, p 6)
- food waste is an important issue for New Zealanders, with 88 per cent agreeing that wasting food feels wrong; key reasons for wasting food were not eating leftovers and having food in the fridge/freezer ‘going off’ (AK Research and Consulting, 2023, p 7)
- most (82 per cent) agreed that reducing plastic waste was an important issue (AK Research and Consulting, 2023, p 8)
- the biggest barrier to reducing plastic waste is finding alternatives (40 per cent) (AK Research and Consulting, 2023, p 65).

These results were also compared with earlier studies from a range of sources to gain a sense of how public attitudes and behaviours are changing over time (Ministry for the Environment, 2023c).⁶ The main findings were:

- people are finding recycling easier (71 per cent) and less confusing (37 per cent) than in the past
- in general, recycling and reducing behaviours seem to have improved in the last few years – but people are less confident about what happens to their recycling than in previous surveys
- more people are dropping off e-waste at a separate location for recycling (46 per cent).

The Packaging Forum also conducted a packaging and recycling survey in 2022, which compared consumer behaviours with an earlier survey in 2018. Key findings included (Horizon Research, 2022, p 2):

- 90 per cent of respondents said they put their recycling out for collection at kerbside, compared to 84 per cent in 2018
- of those who do not have a kerbside collection, 30 per cent put their recyclables in the rubbish bin
- the most recycled items at kerbside are plastic bottles (95 per cent); paper and cardboard (92 per cent); glass bottles and jars (85 per cent) and aluminium cans (82 per cent).

Waste reduction work programme and emissions reduction plan initiatives	Policy and regulatory changes made since 2020 that may have increased the amount of reuse, recycling and recovery include:	Increase
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⁶ Comparisons were made between Colmar Brunton (2018), WasteMINZ (2018) and Rabobank surveys (Rabobank).

- phase-outs of various single-use or hard-to-recycle plastics (with a first tranche of products banned from 1 October 2022⁷ and a second tranche from 1 July 2023),⁸ which can help reduce contamination in recycling
- implementation of a permitting system under the Basel Convention for the export of low-grade plastics, meaning Aotearoa New Zealand companies require a permit to import or export hard-to-recycle plastic waste
- as well as investment through the WMF and PIF outlined above, additional investment in domestic recycling infrastructure through the COVID-19 Response and Recovery Fund and the Climate Emergency Response Fund
- moves to standardise kerbside recycling (as outlined above)
- adoption of a National Plastics Action Plan (Ministry for the Environment, 2021e).

Improving the effectiveness of the levy

Cabinet agreed to changes to increase the effectiveness of the levy in 2020, along with a number of supporting recommendations. Table 14 summarises these topics and progress to date.

Table 14: Status of topics identified in previous levy reviews and Cabinet decisions related to the waste disposal levy

Topic	Description	Status
Managing the impact of an increase in disposal costs on recycling operations	Recycling operations produce some waste by-products (such as floc from metal shredders) that must be disposed of, and will face higher disposal costs as the levy increases.	While recyclers do face higher disposal costs, some recycling operations have also benefited from the increased levy and supporting parts of the work programme (such as investment in improved materials recovery facility sorting equipment). The New Zealand Association of Metal Recyclers received funding from the WMF to assess options for improved management of shredder floc. The resulting report proposed options for further consideration, although none are considered to be short-term solutions, and disposal costs will continue to be a challenge for metal recyclers.

⁷ Tranche 1: Single-use plastic drink stirrers (all plastic types), single-use plastic cotton buds (all plastic types), plastics with pro-degradant additives (subset of plastic type 7), certain PVC food trays and containers (plastic type 3), polystyrene takeaway food and beverage packaging (plastic type 6), expanded polystyrene food and beverage packaging (plastic type 6).

⁸ Tranche 2: single-use plastic drinking straws (with some limited exceptions), single-use plastic tableware and cutlery, single-use plastic produce bags, non-home-compostable produce labels.

		Future introduction of regulated product stewardship schemes (including for tyres – to begin in 2024) and e-waste (scheme design currently underway) could also help to shift some of the costs of managing products at their end of life, from recycling operators to producers and manufacturers.
Strategic investment of the levy	Cabinet recognised, with the growing quantum of levy revenue, the importance of ensuring it is invested strategically by both central and local government.	Changes to the systems and processes for investing the central government portion of the waste levy are outlined above. Territorial authorities are required to invest their portion of levy revenue on matters to promote or achieve waste minimisation, as outlined in their waste management and minimisation plans. In turn, waste management and minimisation plans must have regard to the Aotearoa New Zealand waste strategy. Cabinet agreed investment priorities for the levy in April 2024. These priorities will be reflected in updated supporting information for the WMF when it re-opens.
Reform of the WMA and Litter Act 1979	Cabinet recognised updates to the WMA and Litter Act 1979 would: <ul style="list-style-type: none"> • support greater strategic alignment of levy investment by central and local government • allow for improvements to the administration, compliance, monitoring and enforcement of the levy • allow for modernisation of both pieces of legislation. 	Public consultation on new legislation occurred between October and December 2021. Since then, policy proposals have been approved by the previous Government and will be discussed and agreed with the incoming Government, to determine priorities and alignment and agree next steps (such as revised policy proposals going to Cabinet and drafting of new legislation).
Improved management of illegal dumping and littering	Cabinet recognised that increasing disposal costs could also lead to an increased risk of littering and illegal dumping. In response, Cabinet agreed to adopt strategies for litter prevention and illegal dumping, and to the establishment of funds to tackle litter and dumping (as part of new waste legislation).	In 2022, the Ministry funded Keep New Zealand Beautiful from the levy, to develop a behaviour-change programme to reduce illegal dumping. The first piece of research was a literature review into international strategies for tackling illegal dumping and recommendations for New Zealand to implement (Keep New Zealand Beautiful, 2022a). Sustainable Coastlines also received levy funding for its national coastal litter database, Litter Intelligence . ⁹ The data collection methodology is based on United Nations guidelines and was co-designed alongside the Ministry, Stats NZ and the Department of Conservation.

⁹ Between the previous levy review period (2016/17 to 2018/19) and this review period (2019/20 to 2021/22), there was a decrease in average litter density (from an average of 397 items to 301 items per 1,000 square metres. However, it is difficult to draw inferences as there was also a substantial change in litter surveys logged over those periods (from 96 surveys and a total item count of 39,933 to 1,075 surveys and a total item count of 297,072). In both survey periods, plastic comprised the majority of litter items (over 65 per cent in both cases).

		<p>The most recent litter audit by Keep New Zealand Beautiful suggests a substantial increase in litter since the previous audit (Keep New Zealand Beautiful, 2022b).</p> <p>Proposals for new waste legislation include improvements to tools for managing and preventing litter and dumping.</p>
Improvements in waste data	Past reviews of the levy (and other reports) have identified a lack of waste data.	<p>Progressive changes to the levy and associated reporting requirements are increasing the amount of information the Ministry has on disposal of materials to landfill. In particular, past reviews have only had data available on municipal landfills, but disposal information is now available for class 1 to 5 landfill sites, industrial monofills, and transfer stations. Additional reporting requirements from 1 July 2024 are outlined above.</p> <p>The Ministry is also working on improving the accessibility of data it holds, including through public-facing dashboards.</p>
Approach to industrial monofills	Industrial monofills are sites that accept for disposal waste that is generated from a single industrial process (for example, steel or aluminium making, or pulp and paper making). At the time changes to the levy were adopted in 2020, limited information was available on the types or quantities of waste going to these sites, so it was difficult to assess whether a levy would be appropriate.	<p>Preliminary data from expansion of reporting obligations to industrial monofills (which have been subject to reporting obligations since 1 January 2023) shows 26 industrial monofill sites are now reporting to the Ministry. In total, these sites have reported over 4.8 million tonnes of material disposed of in 2023 to date. This is dominated by a single site, which accounts for over 4 million tonnes of that total.</p> <p>Some sites are voluntarily reporting the origin of the waste they accept, while others report the waste as 'unspecified' (72 per cent). Most of the waste with a specified origin was 'commercial and industrial' (39 per cent).</p>
Approach to rural waste and farm dumps	Some submitters to the levy consultation considered that farm dumps should also be made subject to a levy, or else should be better regulated in other ways to ensure farm waste disposed of on site was also minimised (and its environmental effects appropriately managed).	<p>Work has progressed on improved management of inorganic farm wastes (including agrichemicals and their containers, and farm plastics) through regulated product stewardship (Ministry for the Environment, 2023d).</p> <p>Work has not yet taken place on an overarching regulatory framework (such as national direction under the Resource Management Act 1991), given the substantial reform that has been underway in that area.</p> <p>Freshwater farm plans are a regulated farm-planning process for farmers and growers to identify, manage and reduce the impact of farming on the freshwater environment. Freshwater farm plans are required to consider risks and mitigation actions, including point source discharges such as rubbish dumps and offal pits.</p>
Levy rate and differentiation	<p>Cabinet noted a range of stakeholder views on both what levy rates were most appropriate, and whether (or how) rates should differ between sites.</p> <p>Cabinet identified that this review could assess the initial impacts of the</p>	<p>The changes to the levy agreed in 2020 will be fully implemented by 1 July 2024 (when levy rates will rise to \$60 and \$30 for municipal and construction and demolition landfills, respectively). Additional levy rate changes were established through the Waste Minimisation (Waste Disposal Levy) Amendment Act 2024.</p> <p>Some stakeholders have identified a perceived trend of materials shifting from municipal landfills to other landfill types (which are typically subject to less-stringent environmental controls). This could include waste that is legally able to be accepted at other landfill types, as well as material that should be going to municipal sites – in</p>

	<p>changes and consider the need for additional changes, such as further increases to levy rates or changes to differentiation of rates between sites.</p>	<p>which case, the movement of material would result in both forgone levy revenue and potentially more environmental harm (eg, if putrescible waste is disposed of in landfills without adequate leachate and emissions capture systems in place). The Waste Advisory Board also drew attention to this topic when it provided advice to the Minister on this report.</p> <p>A time series of data on levy payments for sites other than municipal landfills is not yet available, to identify any such possible trends. The time series of waste disposal to municipal sites does not necessarily support this hypothesis; there have not been substantial drops since the levy rate was introduced for construction and demolition sites in 2022.</p>
<p>Implementation of changes to the levy</p>	<p>The changes to the levy have led to an increase in regulated parties from 36 regulated sites in 2017 to 348 by 30 June 2022 (and 570 sites by the end of 2022). Levy revenue has also increased, from around \$40 million per annum in the previous review period to \$80.3 million per annum in the 2021/22 financial year.</p>	<p>Lessons from the levy expansion to date include:</p> <ul style="list-style-type: none"> • the need for a wider range of tools in the regulatory toolbox to enable compliance with a range of regulatory requirements • the need to align powers of entry with similar jurisdictions in other sectors • challenges with detection of disposal facilities not registered in the OWLS – and resistance from the wider sector to inform or report on operators who are not registered • benefits of increased mandatory reporting – the Ministry now has much more information on the quantities of waste being disposed of, and to which fill sites. Additional regulations that take effect from 1 July 2024 will further increase available information, including on the types of waste being disposed of in landfills • the need for clarity of the scope and coverage of the regulations.¹⁰

¹⁰ The wording of the current regulations is such that certain types of earthworks and quarrying activity are also captured by reporting and/or levy payment obligations. There is an opportunity to refine and clarification the intended coverage, which should balance the need for sensible coverage with minimising the risk of levy avoidance activity (ie, it is not desirable for regulations to either over- or under-include sites).

Conclusions and recommendations

The changes that were made to the levy from 2021 onwards were major, and they are still being implemented. The regulated community grew substantially over the period of this review, as did the quantum of levy revenue to be invested.

Recommendations

In order to support continued effective management of the levy, the recommendations are as follows.

- Continue ongoing efforts to ensure strategic investment of levy revenue by both central and local government.
- Ensure waste legislation better supports administration, collection and investment of the levy.
- Review whether relative levy settings for class 1 and class 2 landfills contribute to any unintended outcomes, and if so, whether changes to levy settings or other provisions are required (such as changes in relative levy rates or restrictions on materials that can be disposed of at class 2 landfills).
- Clarify the intended scope of the levy and reporting obligations (through regulatory change proposals, or as part of the legislative change process in the previous recommendation).
- Consider options for better understanding and management of rural wastes.
- Consider how future levy reviews are conducted, including involvement of the Waste Advisory Board in agreeing the scope for the review, and the potential for non-statutory annual reviews to supplement the three-yearly formal review.

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