

Review of the Effectiveness of the Waste Disposal Levy 2017

IN ACCORDANCE WITH SECTION 39 OF THE
WASTE MINIMISATION ACT 2008

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Foreword by the Associate Minister for the Environment



The waste disposal levy is an important tool in delivering on the purpose of the Waste Minimisation Act. Since its introduction by the National-led Government in 2009, the levy has raised more than \$192 million which has been distributed to national and local initiatives to reduce waste.

Funds gathered through the waste disposal levy have been used for a wide range of creative and innovative waste minimisation projects. Funding distributed to territorial authorities and through the Waste Minimisation Fund has been used to establish resource recovery infrastructure to increase opportunities for communities to reduce their waste. Funding has also been used to help educate New Zealanders' about the effects of waste on our environment and to support waste minimisation behaviour. The Ministry for the Environment has also tested different ways in which targeted funding rounds, for example the round focused on solutions for end-of-life tyres, can be used to achieve strategic waste minimisation objectives. These initiatives represent important steps in the development of local and national solutions that combine to achieve diversion of waste from landfills.

Although progress has been made, the findings of this review show that there is still plenty to be done. It is important to send consistent and coherent signals to industry, local government, and the wider community about future directions. Understanding the incentives that spark innovation leading to waste minimisation outcomes that benefit the economy and society is crucial. These factors all require a shared and robust strategy founded on comprehensive information and evidence to guide the waste sector in achieving waste minimisation objectives.

There has been an incomplete picture of the waste sector in New Zealand. The levy has only been applied to disposal facilities that receive household waste – a limited portion of the total waste created. More information will support the development of a staged approach to expanding the levy to additional disposal facilities. In coming years, the focus will be to encourage businesses to rethink the design of their products and systems in order to reduce the harmful impacts of wasted resources. The Waste Minimisation Fund will invest in meaningful projects that provide the necessary system shifts required to maximise waste minimisation outcomes for New Zealand. Continued support will also be provided to territorial authorities to invest in the infrastructure needed to increase the effectiveness in collecting and processing of recoverable, valuable resources in their communities.

The focus will remain on building valued partnerships with business, local government, iwi and the wider community to work together to achieve our shared aspirations to reduce the environmental harm associated with waste, whilst providing environmental, social, economic, and health benefits.

A handwritten signature in blue ink that reads "Scott Simpson". The signature is fluid and cursive, with the first name "Scott" and last name "Simpson" clearly legible.

Hon Scott Simpson
Associate Minister for the Environment

Summary of levy funding and waste diversion



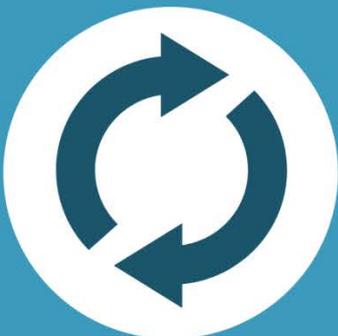
\$92.2m* total levy **funding**



\$46.1m* allocated to
67 territorial authorities



\$40.9m* allocated to
66 WMF projects approved



192,381
reported tonnes of waste **diverted**
from landfill as a result of funding

* from 1 July 2013 to 30 June 2016

Executive summary

The Waste Minimisation Act 2008 requires the Minister for the Environment to review the effectiveness of the levy at least every three years. The current waste disposal levy review is a targeted, interim review between two major reviews: the 2014 review and the upcoming 2020 review. This interim review reports on the effectiveness of the waste disposal levy and associated systems for the period of 1 July 2013 to 30 June 2016. This review also reports on progress against the recommendations from the 2014 review and provides new recommendations for the future.

Waste disposal in New Zealand

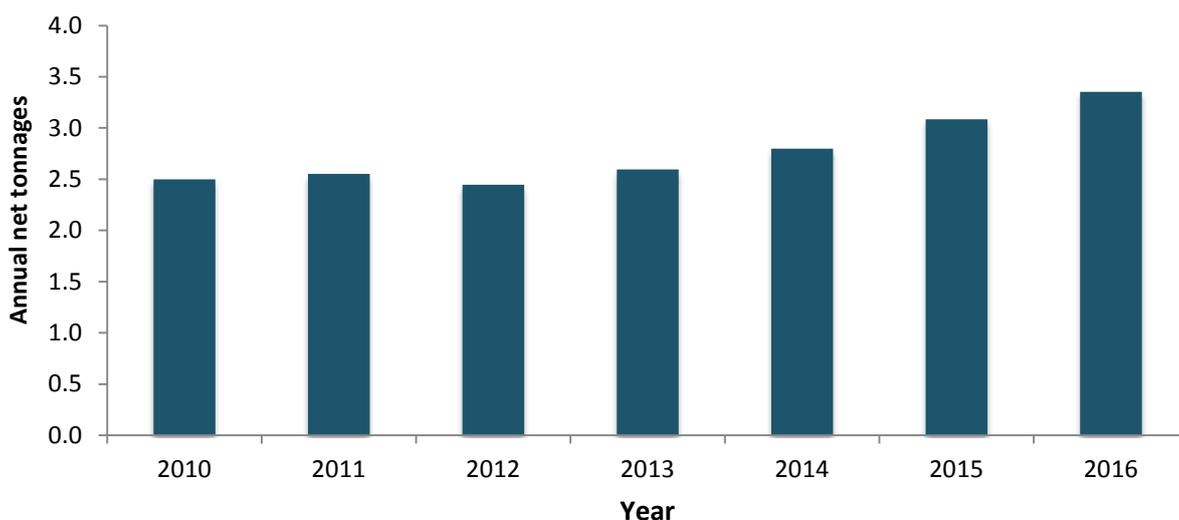
For the review period of 1 July 2013 to 30 June 2016, levied waste disposal facilities received a total of 10,681,295 gross tonnes of waste. From this, 1,207,786 tonnes of material were diverted, leaving total net waste to landfill at 9,473,509 tonnes. Total gross tonnage of waste increased by 16.4% from the 2014 review, while the quantity of waste diverted decreased by 6.3%. As a result, the total net tonnage disposed to levied landfills has increased by 20.1% since the 2014 review. Table 1 compares the two review periods.

Table 1: Total gross, diverted and net tonnages of waste at levied waste disposal facilities for the 2014 and 2017 review periods

	2010/2013	2013/2016	Difference	% Increase/decrease
Total gross tonnage	9,178,592	10,681,295	1,502,703	16.4%
Total diverted tonnage	1,288,766	1,207,786	-80,980	-6.3%
Total net tonnage	7,889,826	9,473,509	1,583,683	20.1%

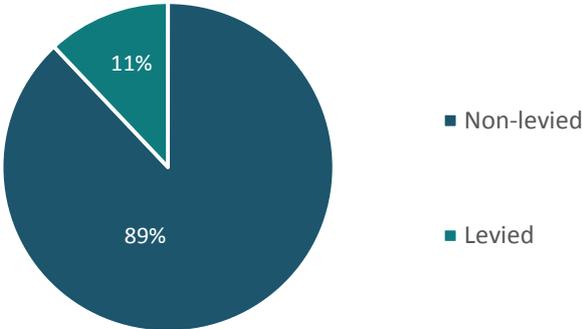
Net waste to levied landfills has increased every year since the levy was introduced (except for 2012). New Zealanders are now producing about 734kg of levied waste per person annually. Figure 1 shows the increasing tonnages of waste to landfill.

Figure 1: Annual net tonnages of waste to levied landfills since 2010



At the end of the current review period, New Zealand had 426 known, consented waste disposal facilities. Of these, 45 were levied and 381 facilities were non-levied. The levy is applied only at class 1 facilities that receive household waste estimated to be about 30% of New Zealand’s total waste stream. Figure 2 demonstrates proportion of levied and non-levied waste disposal facilities.

Figure 2: Proportion of levied and non-levied waste disposal facilities.



Levy collection

The levy rate has remained set at \$10 (plus GST) per tonne since its introduction in 2009. During the review period, total levies received, as reported in the Online Waste Levy System (OWLS), increased by 22% (\$16,591,021) from \$75,201,608 (total levies received during the previous review period) to \$91,792,629. Table 2 shows the levies received during the current review period.

Table 2: Invoices and levies collected each year during the current review period

	2013/2014	2014/2015	2015/2016	Total
No. of levy invoices issues	589	585	575	1749
Total levy	\$27,786,974	\$30,512,577	\$33,493,078	*\$91,792,629

Note: *This figure reported in the above table is obtained from the Online Waste Levy System and is based on actual transactions that occurred during the review period. The Ministry has also reported \$92.2 million as levy allocated for the three year review period (from 2014 to 2016) which differs due to the inclusion of accruals for the period.

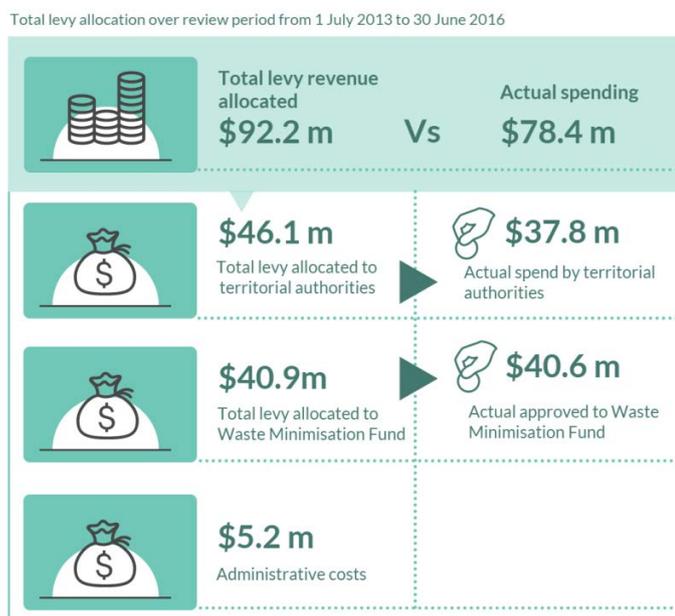
Analysis of the performance of the Secretary for the Environment and the levy collector showed that both met their key statutory and regulatory obligations ([appendix A](#)) throughout the current review period.

Levy allocation

Fifty per cent of gross revenue collected through the levy is allocated to territorial authorities to fund waste minimisation activities. After deducting administrative costs, the remainder of the revenue is allocated to the contestable Waste Minimisation Fund for projects that further the Government’s policy of reducing the harmful effects of waste and improving the efficiency of resource use.

Figure 3 shows that during the current period, the levy collector allocated \$92.2¹ million: \$46.1 million was allocated to territorial authorities, \$40.9 million to the Waste Minimisation Fund and \$5.2 million was spent on administering the levy.

Figure 3: Allocation of the waste disposal levy



Territorial authorities reported an \$8.5 million underspend during the review period. Much of this resulted from less populous territorial authorities (that receive smaller funding allocations) accumulating their funding to engage in larger projects. The Ministry monitors spending by territorial authorities and is confident they are spending their levy funding appropriately.

The levy collector allocated \$40.9 million to the contestable Waste Minimisation Fund. The fund held five contestable rounds during the review period and received 211 eligible applications requesting \$154,444,110. The Minister approved funding for 66 projects with a total value of \$40.6 million. The Minister held one targeted funding round to address end-of-life tyres which approved funding for 15 projects totalling \$19,541,021. Table 3 outlines the Waste Minimisation Fund rounds during the review period.

Table 3: Summary of Waste Minimisation Fund rounds for 2013 to 2015

Funding round	Eligible applications received	Total funding requested	No. of projects approved	Total funding approved
*May 2013	67	\$38,464,737	16	\$7,700,415
August 2014 - TV Takeback (TVTB)	2	\$10,217,008	1	\$4,845,403
May 2014	56	\$53,529,589	17	\$3,319,891
May 2015	43	\$15,357,475	17	\$5,228,217
**October 2015 (End-of-life tyre round)	43	\$36,875,300	15	\$19,541,021
Total	211	\$160,144,109	66	\$40,634,947

*Although this funding round was prior to the current review period, the project funding was approved and allocated in the current review period.

**This round was also open to non- tyre related applications.

¹ Total levies plus accruals for the review period = \$92,207,608

There was an increase in funding for individual Waste Minimisation Fund projects with a value in excess of \$2 million during the current review period. Nearly three quarters of the approved funding was for infrastructure projects (\$30.4 million). The waste stream that received the largest portion of funding was end-of-life tyres at \$18,250,816 (45%).

2014 review recommendations

Of the 11 recommendations made in the 2014 review, two have been completed. Work towards five of the recommendations is in progress, and work on the remaining four recommendations is yet to be started. All recommendations remain relevant. Following the 2014 review period, the Ministry did not have adequate staff and resources to commit towards this work programme.

Concluding statement

Systems and processes to administer the waste disposal levy are operating efficiently and effectively, and all stakeholders are meeting their obligations relevant to this review as prescribed in the Waste Minimisation Act. However, annual levied waste is increasing, indicating that the levy is not currently achieving its objective. Added to this, the majority of New Zealand’s waste disposal facilities are exempt from the levy and no data is available about the waste that is disposed at these facilities.

2017 review recommendations

This review combines recommendations from the previous review to create three clear lines of strategic focus to address these issues in future. These are:

<p>Focus 1. Strategy</p> <p>Develop a clear vision, strategy and set of outcomes for the future direction of the waste disposal levy. Develop an aligned approach to invest funding into projects that are targeted, measurable and provide the greatest returns.</p>	<p>Focus 2. Data</p> <p>Invest in developing a national waste data collection and evaluation framework that targets key information to prioritise waste issues and measures effectiveness of the waste disposal levy.</p>	<p>Focus 3. Approach</p> <p>Develop and implement a staged approach to applying the waste disposal levy across additional classes of landfills and assess the role of a differential rating system.</p>
<p>Aligns with 2014 review recommendations 4, 5, 7</p>	<p>Aligns with 2014 review recommendations 4,7,8,9, 10, and 11</p>	<p>Aligns with 2014 review recommendations 1 and 2</p>
<p>Proposed timeframe: Year 1 and 2</p>	<p>Proposed timeframe: Years 1 to 3</p>	<p>Proposed timeframe: Years 1 to 5.</p>

Introduction

Waste disposal levies can be powerful economic instruments used successfully in many countries to discourage waste disposal and encourage those who manage waste to invest in alternative and innovative options to disposal. Benefits of a levy are twofold:

1. Charging people for disposing of waste provides incentives for individuals and businesses to reduce their waste.
2. Revenue gathered from levies can be invested in supporting waste management and other organisations to transform their infrastructure and services from waste disposal operations to modern and progressive resource recovery centres.

These actions drive economic activity by increasing opportunities for businesses, improving the health of communities, and protecting and restoring the environment.

Although a waste disposal levy was introduced in New Zealand as recently as 2009, funding generated from the levy has already attracted pioneering projects that would not have occurred without the support of waste levy funding. These are being led by innovative and progressive business, local government and community leaders who understand the long-term benefits of doing things differently, and who foresee the benefits of eventually eliminating the business, social, community, cultural, and environmental costs created by a wasteful society.

This review reports on the success of the waste levy for the financial period from 1 July 2013 to 30 June 2016. It highlights the achievements of the recipients of the levy and makes recommendations for future improvements to support opportunities to target investment in areas that will return the greatest waste minimisation outcomes for New Zealand.

This is a targeted, interim review between the major review that occurred in 2014 and the upcoming one in 2020. This review presents an update on key data used to assess the effectiveness of the levy in achieving the outcomes listed in the waste disposal levy outcomes framework. It also provides an update on actions taken on recommendations from the 2014 review. And finally, it identifies areas for future focus that will help to improve the effectiveness of the levy and the way it is applied and administered.

The Waste Minimisation Act 2008

The purpose of the Act is:

- to encourage waste minimisation and a decrease in waste disposal to:
 - (a) protect the environment from harm
 - (b) provide environmental, social, economic, and cultural benefits.

To achieve its purpose, the Act can:

- impose a levy on all waste disposed in levied municipal waste disposal facilities to generate funding to help local government, communities and businesses minimise waste
- establish a process for government accreditation of product stewardship schemes that recognise businesses and organisations that take responsibility for managing the environmental impacts of their products
- require product stewardship schemes to be developed for certain 'priority products' where there is a high risk of environmental harm from the waste or benefits from recovering the product

- allow for regulations to be made to control the disposal of products, materials or waste and require take-back services, deposit fees or labelling of products
- allow for regulations to be made that make it mandatory for certain groups (eg., waste disposal facility operators) to report on waste to improve information on waste minimisation
- clarify the roles and responsibilities of territorial authorities with respect to waste minimisation
- establish a Waste Advisory Board to give independent advice to the Minister for the Environment on waste minimisation issues.

The waste disposal levy

Governments around the world use waste disposal levies as a user-pays way to influence waste management practices, including the diversion of waste. Levies provide incentives for generators of waste to either reduce the amount of waste they generate or divert waste away from waste disposal facilities to other productive uses, such as reuse and recycling. Apart from influencing waste disposal behaviour, waste disposal levies raise revenue for specific waste management and minimisation purposes.

A waste disposal levy in New Zealand is consistent with the polluter-pays principle. The levy was introduced to provide adequate funding to improve waste minimisation services, and act as an incentive to minimise the production of waste and divert waste away from waste disposal facilities.

The Waste Minimisation Act (s25) sets out the two purposes of the levy as follows:

- (a) to raise revenue for promoting and achieving waste minimisation, and
- (b) to increase the cost of waste disposal to recognise that disposal imposes costs on the environment, society and the economy.

The levy has remained set at a rate of \$10 (plus GST) per tonne since its introduction. The revenue raised by the levy is collected by the Ministry for the Environment (the Ministry) and allocated as follows:

1. Half of the revenue is paid to territorial authorities (councils) to spend on promoting or achieving waste minimisation.
2. The Ministry deducts administration costs to collect and administer the levy and the Waste Minimisation Fund.
3. The balance is allocated to the Waste Minimisation Fund to pay for projects that promote or achieve waste minimisation.

The waste disposal levy is intended to be a catalyst for change that will contribute towards the systems' shifts required to reduce the harmful impacts of waste. Efficient and effective application of the waste disposal levy will help protect the natural environment for future generations.

Waste disposal levy reviews

The Act requires the Minister to review the effectiveness of the levy at least once every three years. The review is an opportunity for the Minister to consider whether the levy is an effective mechanism for:

- raising revenue for waste minimisation
- reducing the amount of waste that is disposed
- increasing the amount of waste that is reused, recycled or recovered.

The Act states (s39) that, in undertaking a review, the Minister:

- (a) must obtain and consider the advice of the Waste Advisory Board;
- (b) must consider whether the amount of waste disposed of in New Zealand has decreased since the last review;
- (c) must consider whether the amount of waste reused, recycled or recovered in New Zealand has increased since the last review; and
- (d) may consider any other matters that he or she thinks relevant.

Previous reviews

There have been two reviews since the introduction of the levy. The first review was completed in July 2011 and the second review in 2014.

During 2011 review, the levy had only been in place for two years which meant there was limited data and information from which to measure the effectiveness of the levy. The auditing of disposal facilities found potential for levy avoidance through misclassification of material as diverted, but at that early point in levy's operation it was too soon to determine how widespread or significant these issues were.

The 2014 review provided a more comprehensive analysis of the efficacy of the levy. As part of this review, Ministry for the Environment officials created an outcomes framework (figure 4) to provide a structure for evaluating the effectiveness of the levy and to create consistency in gathering and presenting data for future reviews. The review presented 11 recommendations for improving the effectiveness of the levy (table 28).

Current review

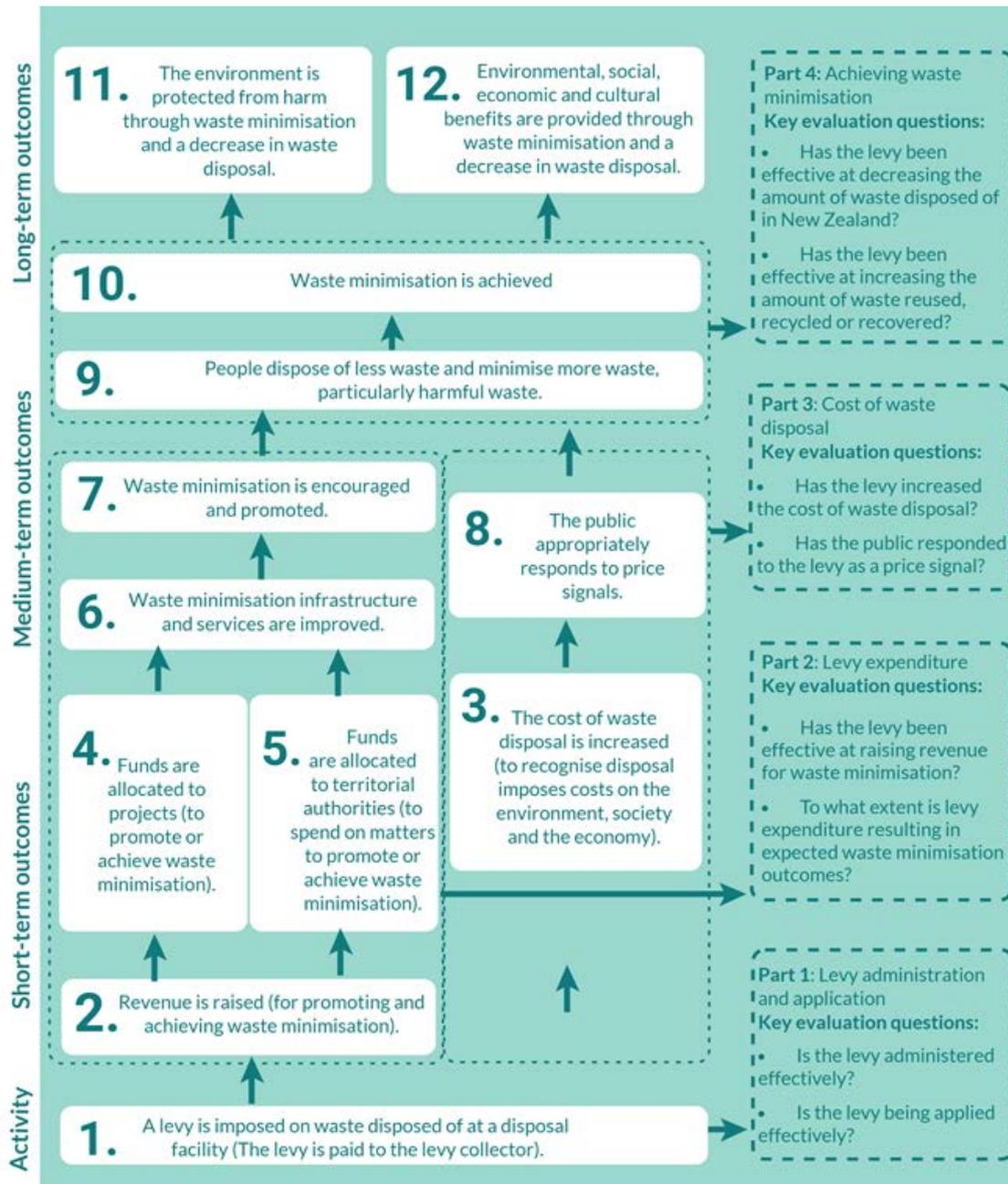
The scope for the 2017 waste disposal levy review is more targeted than the 2014 review because there has been no significant change in the administration or application of the levy. This review reports on the effectiveness of the levy and associated systems over the past three years as well as progress against the recommendations from the previous review.

The waste disposal levy outcomes framework

For consistency, the current review uses the outcomes framework developed for previous reviews. Consistency in reporting helps the Ministry to build up a clearer picture of the waste sector, and trends in waste disposal and waste minimisation activity.

The framework should be read from the bottom to top, that is, from the activity of imposing the levy to the long-term outcomes to which the levy is designed to contribute.

Figure 4: Waste Disposal Levy Outcomes Framework



Waste disposal facilities

A waste disposal facility is defined in section 7 of the Act as ‘a facility, including a landfill, at which waste is disposed of; and at which the waste disposed of includes household waste; and that operates, at least in part, as a business to dispose of waste; and any other facility or class of facility at which waste is disposed of that is prescribed as a disposal facility’.

The waste sector has voluntarily developed a set of guidelines for classification of waste disposal facilities based on the types of waste received. Class 1 waste disposal facilities receive materials with the highest risk of environmental contamination while class 4 facilities receive materials with the lowest risk. Class 2 and 3 facilities receive materials that fall in between these two extremes. Throughout this report we will refer to these different classes of facilities.

Table 4 shows waste disposal facility classes and types of materials received by each class.

Table 4: Classification of waste disposal facilities by waste composition

Class	Common name	Waste composition
1	Municipal solid waste disposal facility	Treated hazardous waste, industrial waste, commercial waste, household waste, municipal solid waste, construction and demolition waste, managed fill material, clean fill material
2	Construction and demolition waste disposal facility	Non-putrescible industrial waste, construction and demolition waste, managed fill material, clean fill material
3	Controlled fill waste disposal facility	Managed fill material, clean fill material
4	Cleanfill waste disposal facility	Clean fill material

From 1 July 2009, the Act imposed a levy on all waste delivered to disposal facilities that receive household waste. Class 1 facilities that do not receive household waste are exempt from the levy.

The structure of this report

This report is organised into three sections.

1. Section I presents relevant data and information from the review period – 1 July 2013 to 30 June 2016.
2. Section II provides an update of progress towards fulfilling the 11 recommendations from the 2014 review.
3. Section III presents a summary of potential work planned for the coming period – 1 July 2017 to 30 June 2020 and beyond.

Section I

Triennial waste disposal levy report: July 2013 to June 2016

This section reports on data and information related to levy administration, allocation of levy funds to territorial authorities, and the Waste Minimisation Fund over the review period from 1 July 2013 to 30 July 2016. The proposed structure is consistent with previous reviews and ensures continuity and comparability with historical data.

Part 1: Administration and application

Effective administration and application of the levy relies on waste disposal facility operators and those responsible for calculating, collecting, paying and administering the levy to fulfil their roles in accordance with their statutory and regulatory obligations. Non-compliance by any party may result in lost revenue and a reduction in the effectiveness of levy as a waste minimisation tool.

The Waste Minimisation Act 2008 delegates the Secretary for the Environment with responsibility for applying and administering the levy. This section reports on levied waste disposal facilities in New Zealand and the waste disposed at these facilities. It also reports on:

- accuracy of waste measurement
- timeliness of waste reporting
- timeliness of levy payments
- performance of the Secretary for the Environment and the levy collector.

This part assesses achievement of the following outcomes in the waste disposal levy outcomes framework.

- Activity 1: A levy is imposed on waste disposed at a disposal facility (the levy is paid to the levy collector)
- Outcome 2: Revenue is raised (for promoting and achieving waste minimisation).

Number and size of waste disposal facilities

At the end of the current review period, New Zealand had 426 known waste disposal facilities. Of these, 45 were levied (11%) and 381 (89%) were non-levied facilities ([appendix B](#)). The 2014 review recorded 48 levied waste disposal facilities; three small waste facilities have closed since that time ([appendix C](#)).

Results from the recent National Waste Disposal Survey (MWH 2017) showed the proportion of class 1 levied landfills decreased from 12% to 2% while the proportion of class 3 landfills increased from 2% to 36% from the previous review period.

Table 5 shows waste disposal facilities by class and the number of facilities in each class.

Table 5: Number of waste disposal facilities by class

Class	Common name	Number
1	Levied municipal solid waste disposal facility	45
	Non-levied, non-municipal waste disposal facility	9
2	Construction and demolition waste disposal facility	46
3	Controlled fill waste disposal facility	139
4	Cleanfill waste disposal facility	81
	*Unknown	106
Total		426

*MWH reported 28% of waste disposal facilities surveyed were unable to be classed because there was insufficient information to do so.

Waste disposal facilities vary in the amount of waste they manage. New Zealand's two largest levied disposal facilities receive the majority of the total monthly net waste while the smallest 11 facilities receive just 0.2% of the total monthly net waste.

Waste to landfill

Waste disposal facility operators calculate net weight of waste by measuring the tonnage of waste entering a facility (gross tonnage) and subtracting the tonnage of diverted material (diverted tonnage). Operators pay the levy based on calculated tonnage of net waste.

Between July 2013 and June 2016, levied waste disposal facilities received a total of 10,681,295 tonnes of gross tonnage of waste. From this, 1,207,786 tonnes of material were diverted, leaving total net waste tonnage of 9,473,509 tonnes.

Table 6 shows the gross, diverted and net tonnages of waste reported by New Zealand's levied waste disposal facilities for each year of the current review period.

Table 6: Annual gross, diverted and net tonnages of waste at levied waste disposal facilities during the current review period

	2013/2014	2014/2015	2015/2016	Total
Total gross tonnage	3,325,859	3,593,491	3,761,945	10,681,295
Total diverted tonnage	406,417	418,971	382,398	1,207,786
Total net tonnage	2,919,442	3,174,520	3,379,547	9,473,509

Table 7 shows the total gross, diverted and net tonnages of waste reported by levied waste disposal facilities for the current and previous review periods. Differences between the two periods and percentage increases and decreases are shown for comparison purposes.

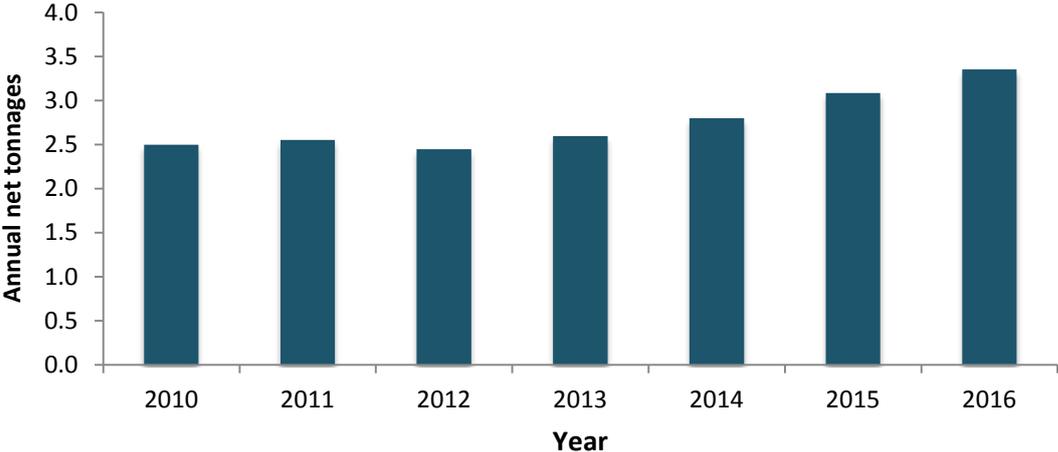
Table 7: Total gross, diverted and net tonnages of waste at levied waste disposal facilities for the 2014 and 2017 review periods

	2010/2013	2013/2016	Difference	% Increase/decrease
Total gross tonnage	9,178,592	10,681,295	1,502,703	16.4%
Total diverted tonnage	1,288,766	1,207,786	-80,980	-6.3%
Total net tonnage	7,889,826	9,473,509	1,583,683	20.1%

As table 7 shows, the total gross tonnage of waste received by levied waste disposal facilities increased by 1,502,703 tonnes across the two review periods. At the same time the quantity of waste diverted decreased by 80,980 tonnes (6.3%) which could be due to better understanding of acceptance criteria of landfill cover. As a result, an additional 1,583,683 tonnes of waste was disposed to levied landfill during the current review period compared to 2014 review period. This equates to a 20.1% increase in waste to levied landfills.

Figure 5 shows annual net tonnages of waste to levied landfills since the introduction of the levy.

Figure 5: Annual net tonnages of waste to levied landfills since 2010

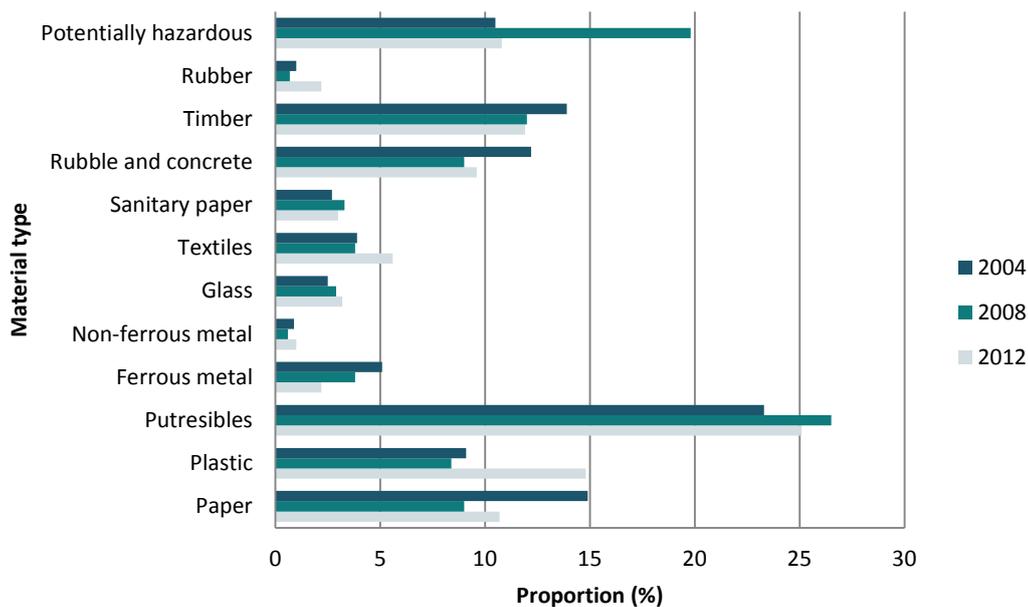


As the chart shows net tonnages of waste to levied landfills has increased every year (except 2012) since the levy was introduced.

Composition of waste in New Zealand

The composition of waste disposed of at municipal waste disposal facilities has been estimated for 2004, 2008 and 2012 using data obtained through Solid Waste Analysis Protocol (SWAP) surveys (SWAP surveys have not been conducted since 2012.) These surveys were carried out at a sample of municipal waste disposal facilities to estimate national waste composition. Estimates of proportions of the most common waste streams at municipal waste disposal facilities are presented in figure 6.

Figure 6: Estimated proportion for common waste streams at municipal waste disposal facilities from 2004 to 2012



Source: WasteNot Consulting, 2013.

The largest waste stream in 2012 was putrescible material (food and garden waste), followed by plastic, timber, paper and potentially hazardous waste. Rubble and concrete also constitute a large proportion of the total waste stream.

Anecdotal evidence from operators suggests that waste disposal facilities are ‘becoming drier’ as a result of less putrescible and green waste being disposed. This would tend to indicate that projects to remove green waste and putrescible material from the waste stream are starting to have an impact.

Waste measurement systems

Differences in equipment, staff expertise and resourcing at waste disposal facilities can lead to a variation of operational capability and effectiveness at facilities. The regulations require levied waste facility operators to measure waste using one (or a combination) of the following methods:

1. a compliant weighbridge
2. volume conversion factors
3. an approved average tonnage system.

Weighbridges are the most accurate form of measurement. During the current review period, the compliance assurance programme has focused on ensuring that every weighbridge is inspected and certified each year. Table 8 shows methods used to measure waste at levied waste disposal facilities.

Table 8: Waste measurement methods at levied waste disposal sites

Waste measurement method	Number of facilities
On-site weighbridge	29*
Off-site weighbridge	3
Volume conversion	11
Average tonnage method	2
Total	45

*Two waste facilities use average tonnage measurements for non-commercial vehicles.

Thirty-two out of 45 levied waste facility operators (71%) use a compliant and functioning weighbridge to measure waste, as seen in table 8. The operators of the 13 facilities using volume conversion or average tonnage methods reported that it was uneconomical to install a weighbridge. These facilities receive only about 0.13% of waste in total.

Before the 2014 review, contracted auditors and Ministry officials observed examples of waste classified as reused or recycled by waste disposal facility operators as they were being used as cover, or intermediate capping, or leachate drainage. Waste used in this manner included by-products from metal crushing/recycling (shredder floc), pulp waste, shredded tyres, lime glass, and contaminated soils. Since the 2014 review, the Ministry has addressed this issue with all operators and followed up with an intensive and robust compliance programme. All materials that are not diverted, that is, all materials disposed to land, regardless of whether they are used as cover, are now classified as waste and levied appropriately. This may explain the decrease in diverted tonnages recorded for the review period.

The greatest proportion of gross and diverted tonnages (from which net tonnage is calculated) are measured using on-site weighbridges, and operators have adequate or strong system controls to provide a high level of confidence in the accuracy of net tonnage reporting. As a result, the accuracy of net weight calculations is not a risk to the effectiveness of levy administration.

Waste returns

The Act requires levied waste disposal facility operators to comply with regulatory requirements for keeping and providing records and for submitting waste returns in a timely manner. A waste return includes details of gross tonnage of waste received, diverted tonnage (for reuse, recycling or removal from the site), and net tonnage of waste disposed to landfill within a reporting period.

Waste disposal facility operators are required to submit monthly waste returns through the Online Waste Levy System (OWLS) on or before the 20th of the month following waste disposal. Operators are also required to verify their returns in OWLS before these are finalised. Facilities that receive less than 1000 tonnes of net waste annually may apply to submit an annual return rather than a monthly return.

Waste facility operators submitted 1439 waste returns from 1 July 2013 to 30 June 2016. Of these, 50 were submitted after the due date. The most common reason for late submission of waste returns was staff absence (leave or sickness).

An analysis of these late waste return submissions showed no discernible pattern in the types of operators or the length of time after due date the returns were submitted. No penalties were imposed for late waste returns during the review period.

Late waste returns do not currently present any risk to the effectiveness of the levy.

Waste disposal levy collection

The Act requires municipal waste disposal facility operators to pay levies to the levy collector in a timely manner. The levy collector sends levy invoices to waste facilities on or before the 15th day from the day the waste return is due. Facilities are required to pay their levies within three months of the date of invoice.

Table 9 shows the number of levy invoices issued by the levy collector and the total levies collected by the levy collector in each year of the current review period.

Table 9: Invoices and levies collected each year during the current review period

	2013/2014	2014/2015	2015/2016	Total
No. of levy invoices issues	589	585	575	1749
Total levy	\$27,786,974	\$30,512,577	\$33,493,078	*\$91,792,629

Note: *This figure is obtained from the Online Waste Levy System (OWLS) and is based on actual transactions that occurred during the review period. The Ministry has also reported \$92.2 million as levy allocated for the three year review period (from 2014 to 2016) which differs due to the inclusion of accruals for the period.

The levy collector issued 1749 levy invoices from 1 July 2013 to 30 June 2016. Of these, 1479 were paid on time. The most common reason for late payment of invoices was staff leave. Late payment of levy invoices do not currently present any risk to the effectiveness of the levy.

During the current review period, total levies collected, as reported in OWLS, increased by \$16,591,021 (22%) from \$75,201,608 (total levy collected in previous review period) to \$91,792,629.

Waste disposal facility operators are charged interest on unpaid invoices. Invoices for interest on unpaid levies are payable one month after the date of invoice. The levy collector sent 137 invoices for interest on late payments from 1 July 2013 to 30 June 2016.

Table 10 shows the number and amount of invoices for interest on unpaid levies issued by the levy collector in each year of the current review period.

Table 10: Invoices for interest on unpaid levies during the current review period

Financial year	No. of interest invoices	Interest on unpaid invoices
2013/2014	44	\$1,538.46
2014/2015	37	\$930.85
2015/2016	56	\$1,420.91
Total	137	\$3890.22

The total interest charged for late payment of invoices is small when compared with the total levy collected. Just \$3890.22 was charged in interest from 1 July 2013 to 30 June 2016.

The levy collector deals with late payments of both levy and interest invoices. Debt collection has not been required during the current review period.

Waste disposal levy payments waivers

The Secretary for the Environment may waive the requirement for a waste disposal facility to pay the levy under exceptional circumstances (eg, something that could not reasonably be predicted or expected and is not a regular event, such as a natural disaster). Waste disposal facility operators may apply to the Secretary for the Environment showing reasons why they seek a waiver.

There was one waiver in January 2015. The waiver was applied to stockpiles of non-waste material being incorrectly described as being in an active waste disposal facility.

Performance of the Secretary for the Environment and the levy collector

The Act and the Waste Minimisation (calculation and payment of waste disposal levy) Regulations 2009 specify responsibilities for the Secretary for the Environment and the levy collector. The Secretary's performance is assessed against the key statutory and regulatory functions relevant to this review in [appendix A](#), table 31. The Secretary met all of these requirements.

The levy collector is contracted to the Secretary. Performance is assessed against selected key statutory and regulatory functions that are relevant to this review in [appendix A](#), table 30. No issues about the levy collector's compliance with all contracted performance measures have been raised during the current review period.

Achievement of outcomes

Data collected through the OWLS database show that the gross tonnage of waste received at levied waste disposal facilities has increased by 1,502,703 tonnes (16.4%) since the 2014 review. At the same time, the quantity of waste diverted from landfill decreased by 80,980 tonnes (6.3%). As a result, an additional 1,583,683 tonnes of waste went to landfill during the current review period than the previous review period.

The administrative process for calculating and paying the levy is deemed to be operating effectively.

Key findings

Key findings of this review are listed below.

- The majority of waste material deposited at levied waste disposal facilities is being recorded accurately and reported within statutory requirements.
- Levied waste disposal facility operators are meeting their obligations for levy payments as described in the Act and the regulations.
- Late levy payments represent only a small proportion of the total waste levies.
- The Secretary for the Environment and the levy collector have met their statutory obligations in collecting the levy.

Observations

During the current review period, the number of class 1 levied waste disposal facilities has decreased while the number of non-levied class 3 facilities has increased. Added to this, the size of some existing facilities in class 3 facilities has increased. Although the amount of waste to class 1 landfills increased by 1,583,683 tonnes during the current review period, shift in the number and size of waste disposal facilities may suggest some leakage from levied class 1 facilities to unlevied class 3 facilities. Over time, this practice can undermine the intent of the levy. The issue is addressed in section II describing responses to the 2014 review recommendations.

Outcome achievement ratings

The following table shows ratings for achievement of outcomes in the waste disposal levy outcomes framework.

Key	Achieved 	In progress 	No progress 	Progress unknown 
Outcome				Rating
1: A levy is imposed on waste disposed at a disposal facility (the levy is paid to the levy collector)				
2: Revenue is raised (for promoting and achieving waste minimisation)				

Part 2: Levy expenditure

Part 2 reports on the distribution of revenue raised by the levy during the current review period.

Revenue is allocated through two channels.

1. Fifty per cent of gross revenue is allocated to territorial authorities (the territorial authority fund) for waste minimisation activities specified in territorial authorities' waste management and minimisation plans.
2. The remainder of the revenue (after deducting administrative costs) is allocated to a contestable fund (the Waste Minimisation Fund) for waste minimisation projects that further the Government's policy on waste.

Funding through each channel is required to be spent on activities that encourage, promote and achieve waste minimisation.

This part assesses achievement of the following outcomes of the waste disposal levy outcomes framework.

- *Outcome 4: Funds are allocated to territorial authorities (and spent on matters to achieve and promote waste minimisation).*
- *Outcome 5: Funds are allocated to projects (to promote or achieve waste minimisation).*
- *Outcome 6: Waste minimisation infrastructure and services are improved.*

Overall funding allocation

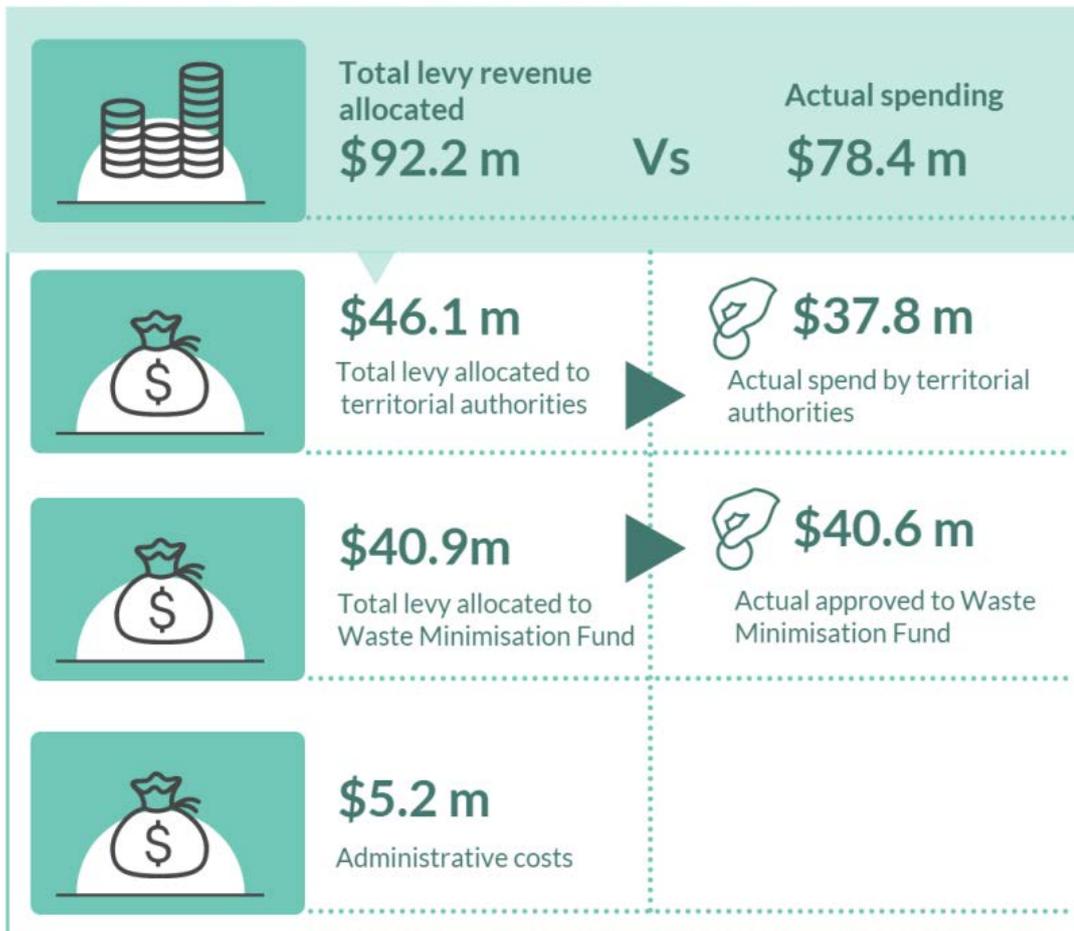
The levy collector allocated \$92.2 million between 1 July 2013 and 30 June 2016. \$46.1 million was allocated to the territorial authorities and \$40.9 million was allocated to the Waste Minimisation Fund. \$5.2 million was spent on administering the levy.

Total funding allocated: **\$92.2m**

Of the total funding allocated, \$13.8 million remained unspent at the end of the review period. Reasons for this underspend are discussed in the relevant sections below.

Figure 7: Allocation of the waste disposal levy

Total levy allocation over review period from 1 July 2013 to 30 June 2016



Note: Total figures have been rounded for illustrative purposes.

The territorial authority fund

Under the Waste Minimisation Act 2008, territorial authorities are required to use the funding they receive ‘to operate effective and efficient waste management systems’ and ‘to promote waste minimisation behaviour within their cities and districts’. As a requirement of funding, each territorial authority must create, maintain and review a waste management and minimisation plan that details planned projects and activities².

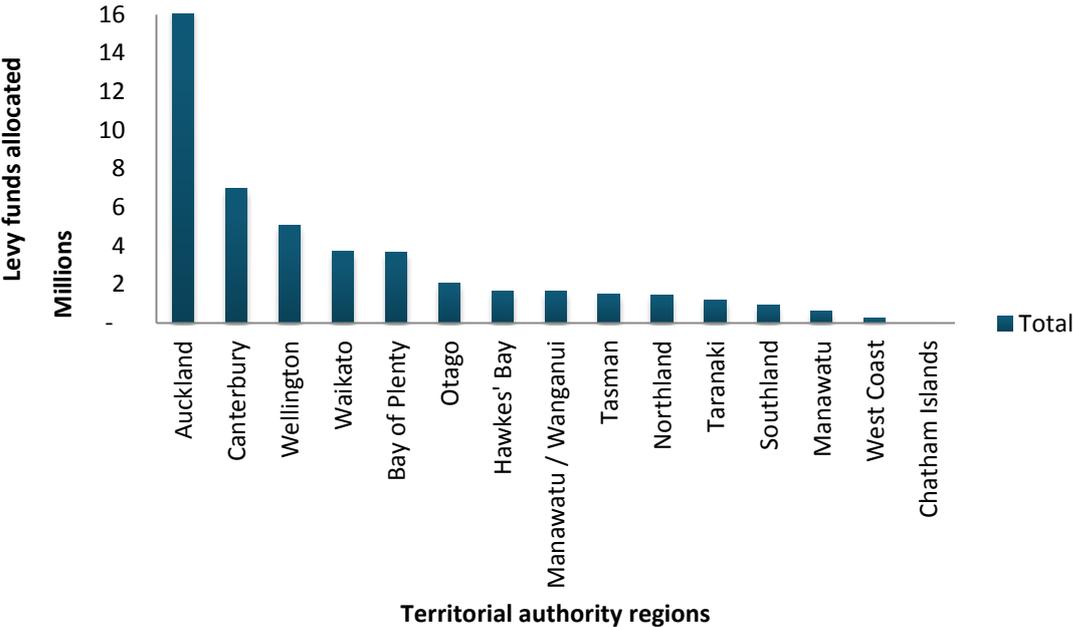
Territorial authority fund allocation

The levy collector distributed \$46.1 million to the 67 territorial authorities across New Zealand during the current review period. Funding is apportioned based on the population within each territorial authority.

Figure 8 shows the amount of territorial authority funding allocated to each region. A table showing funding allocated to each territorial authority is shown in [appendix D](#).

² Waste management and minimisation plans must be reviewed every six years.

Figure 8: Funding allocated to territorial authorities by region



As the chart shows, significant variation exists in the amount of funding allocated to territorial authorities at a regional level.

Territorial authority fund expenditure by project category

Territorial authority spending is organised into five categories for reporting purposes. The categories are: infrastructure, services, education and communication, research and reporting, and other initiatives. Table 11 provides a description and example for each spend category.

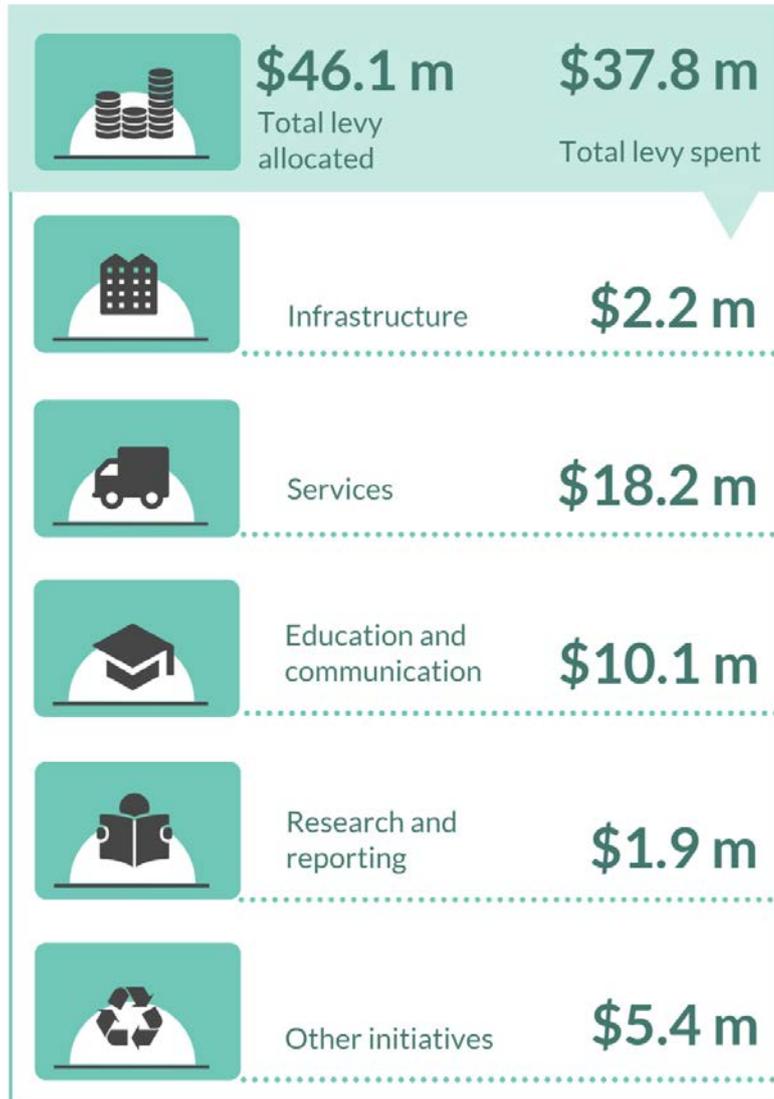
Table 11: Territorial authority spend categories, definitions and examples

Category	Description
Infrastructure	This includes all items that have an asset value and are managed under a territorial authority’s solid waste asset management plan. For example, the Western Bay of Plenty’s Katikati recycling centre expansion is classified as infrastructure.
Services	This includes all costs directly related to the provision of a service, and includes all contract costs and consumable items such as bags, stickers, etc. For example, Wellington City Council’s e-waste drop-off facility at the Southern Landfill is classified as a service.
Education and communication	This includes all education- and communication-related spending, such as communications about the introduction of new services or expansion of existing services and education aimed at students or the public, and includes workshops or other public-facing messaging that councils develop about waste minimisation. For example, the Para Kore Zero Waste Marae education programme and contributions to the Love Food Hate Waste education campaign are classified as education and communication.
Research and reporting	This includes all functions that promote and support waste minimisation outcomes, such as research, surveys, studies, trials and pilot schemes, and includes policy initiatives, such as development of bylaws or charging regimes and monitoring and gathering of information and data and their analysis and reporting. For example, Palmerston North City Council waste bylaw development is classified as research and reporting.
Other initiatives	This includes all other waste minimisation initiatives that do not fit under any of the above classifications. For example, cofounding of collaborative projects (such as Waste Minimisation Fund projects) is classified as an ‘other’ initiative.

Figure 9 shows territorial authorities spent \$37.8 million of the \$46.1 million they were allocated during the current period. The largest spend was in the services category at \$18.2 million.

Figure 9: Territorial authority spending by spend category during the current review period

TA levy spending by project type (1 July 2013 to 30 June 2016)



Note: Totals for each category have been rounded for illustrative purposes.

Figure 10 shows the proportion of total territorial authority spend in each spend category during the current review period.

Figure 10: Proportion of total territorial authority spending by spend category during the current review period

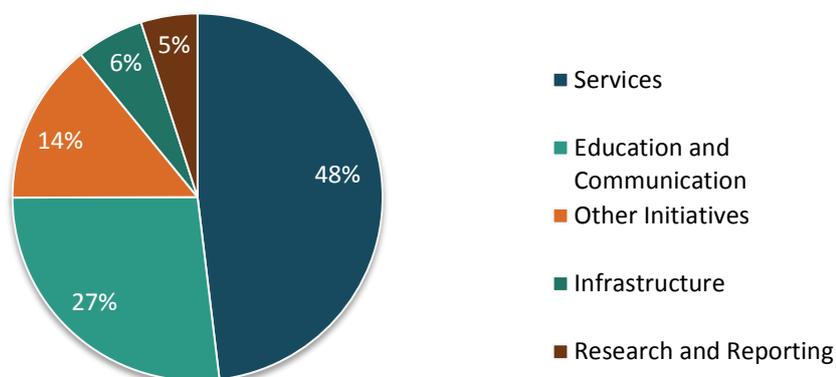


Table 12 shows funding spent annually in each spend category by all territorial authorities during each financial year of the review period.

Table 12: Annual funding spent by territorial authorities in each spend category

Category	Total spend previous review	2013/14	2014/15	2015/16	Total spend current review
Infrastructure	\$2,874,793	\$623,696	\$632,068	\$982,382	\$2,238,147
Services	\$7,874,793	\$3,984,643	\$6,500,950	\$7,723,477	\$18,209,071
Education and communication	\$5,103,703	\$3,038,733	\$3,208,904	\$3,914,410	\$10,162,047
Research and reporting	\$3,125,742	\$810,625	\$725,707	\$334,112	\$1,870,443
Other initiatives	\$5,172,994	\$2,798,124	\$1,417,805	\$1,154,838	\$5,370,768
Total	\$24,152,025	\$11,255,821	\$12,485,435	\$14,109,220	\$37,850,475

Figure 11 shows trends in territorial authorities' annual spending for each spend category during the current review period.

Figure 11: Annual territorial authority spending by spend category during the current review period

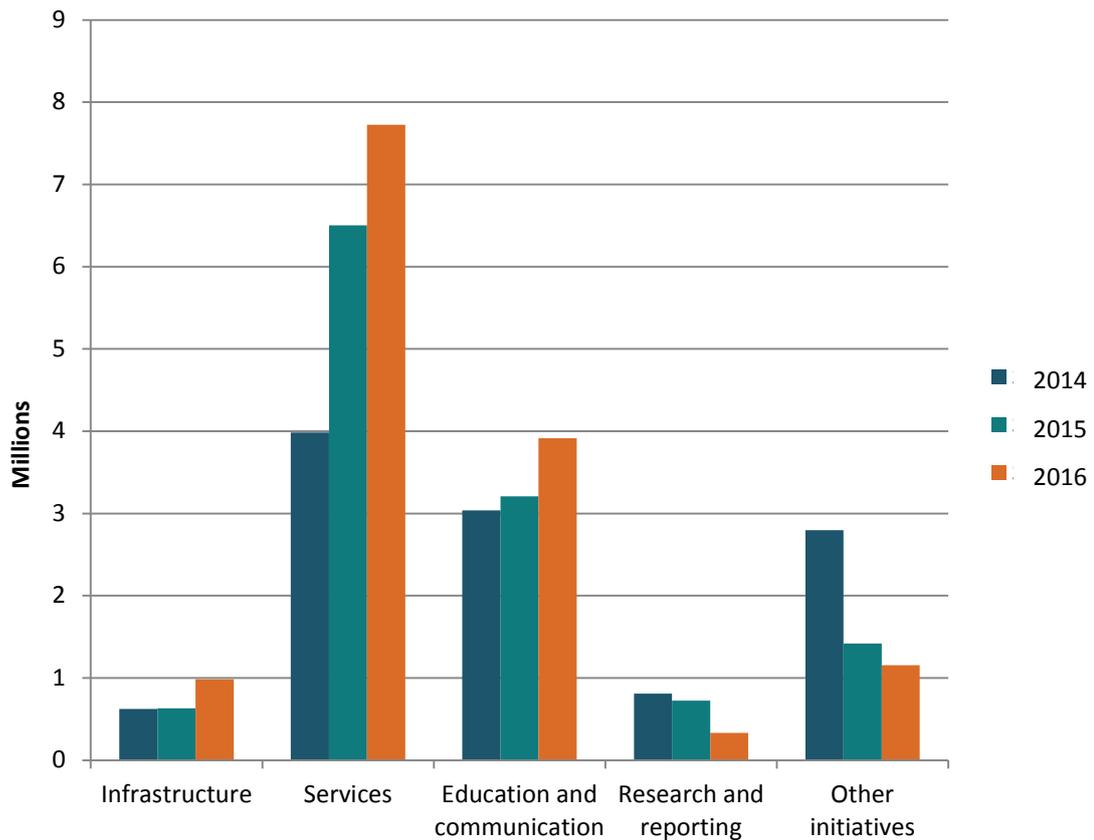


Figure 11 shows spending has increased in the infrastructure, services, and education and communication categories during the current review period while it has decreased in the research and reporting, and other initiatives categories.

However, when comparing spending between the two review periods the trend is very different as explained below.

Infrastructure projects

Territorial authority spending on waste minimisation infrastructure projects during the current review period decreased by 22% from the previous review period. Spending during the current period was \$2,238,147 (6% of total expenditure) across all territorial authorities. Spending during the previous review period was higher at \$2,874,793.

Although territorial authorities spent a relatively small percentage of their funding on infrastructure projects, they also contributed funding from other sources to build new infrastructure. An example of this is Auckland Council’s development of a resource recovery network.

Services projects

During the current review period, territorial authorities reported spending \$18,209,071 on waste minimisation services projects (48% of total expenditure). Territorial authorities’ spending on services projects during the previous review period was \$7,897,385. This equates to an increase of 130% for the current review period.

This increase was due to larger territorial authorities expanding their services to include more options for rate payers to minimise waste, and introducing organic, inorganic and kerbside resource recovery collections.

The two main contributors to the increase were: Auckland City Council, which ran two initiatives to support implementation of their waste management and minimisation plan at a cost of \$2.8 million; and Wellington City Council, which ran three enhanced kerbside recycling projects at a cost of \$2.2 million.

Case Study 1: Tauranga Resource Wise Events

Funding and collaboration combine to build waste minimisation capacity at Tauranga events

Tauranga City Council (TCC) supported waste minimisation at events for approximately seven years using information brochures, direct advice, infrastructure and dedicated consultant support. Following a review of this support, TCC discovered that a high number of event organisers had become reliant on the support and did not incorporate waste management into their planning or budgeting for future events. In 2015 TCC established the Resource Wise Events Programme. The programme was made available to events that received funding from the council through the Strategic and City Events Team. By collaborating with other council funds, the programme set a precedent for TCC’s expectations on waste management and minimisation. Under the programme, event organisers take a holistic approach to addressing waste streams from the outset of event planning, enabling the event organiser to understand the impacts of the waste they are generating. Event organisers now work harder with their vendors to ensure they use packaging that can be either composted or recycled. This vendor engagement is further supported by the Council-developed Vendor Packaging Guidelines.

» “In the future, we will attempt to use and develop the same principles for waste management implemented during the Ra Whakangahau Festival ... it not only saves our school money from reducing waste transportation costs, it reminds us of the role we all have as kaitiaki o te whenua.”³ «



The programme has increased the amount of waste diverted at events and has ensured that vendors are using packaging that is accepted at local processing facilities. It has created a network of educated event organisers, vendors and volunteers and, in turn, has provided the community with consistent education about waste minimisation. As more events are incorporating composting and recycling options, the demand for these services has increased. So a number of external waste service providers and consultants have extended the range of services they offer to include waste minimisation at events, resulting in more employment opportunities for

³ Ben Fuller, Principal at St Mary’s Catholic School Tauranga, Community Event Fund Recipient.

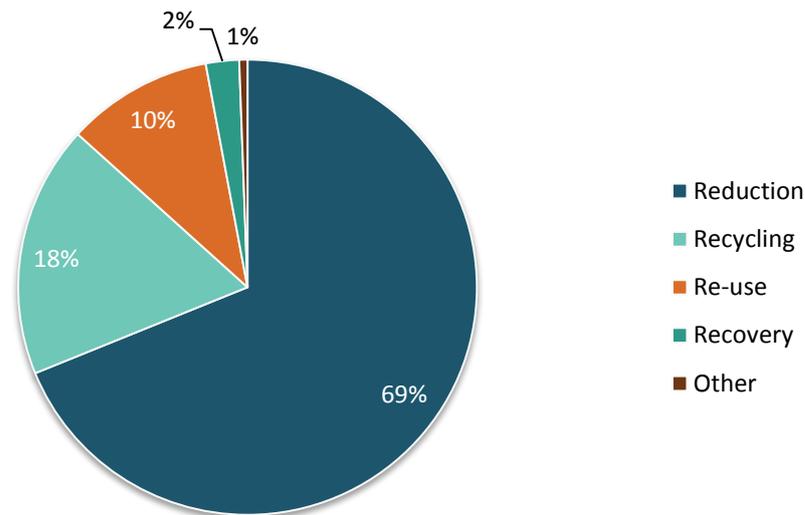
the local community. The programme has emphasised how important well trained and valued volunteers can be to events and the fundamental role they play in enhancing the experience for attendees. Throughout the participating events, a sense of community pride and spirit has grown among the team of volunteers who are becoming more passionate about the environment. The volunteers are now active waste minimisation ambassadors throughout the wider community.

Education and communication projects

Territorial authority spending on waste minimisation education and communication projects increased by 99% during the current review period compared with spending in the previous review period. Spending during the current period was \$10,162,047 (27% of total expenditure). Spending from 2010 to 2013 was substantially lower at \$5,103,703.

Figure 12 shows the proportion of territorial authority spending on education and communication projects for each of five project focuses: reduction, recycling, re-use, recovery, and other.

Figure 12: Proportion of territorial authority spending on waste minimisation education and communication by project focus



As the chart shows, the majority of funding spent by territorial authorities on education and communication was on encouraging people to reduce the amount of waste they produced. This indicates that territorial authorities are focused on preventing waste being produced rather than just managing waste through recycling after it has been generated.

Research and reporting projects

Territorial authority spending on research and reporting projects decreased by 40% during the current review period compared with spending in the previous review period. Spending during the current period was \$1,870,443 (5% of total expenditure), while spending from 2010 to 2013 was higher at \$3,125,742.

Most of the funding spent by territorial authorities on research and reporting projects was to improve understanding of waste minimisation activities within cities or districts. Territorial authorities also spent funding on developing bylaws to support waste minimisation activities and data collection.

Other initiatives

Territorial authorities' spending on other initiatives increased by 4% during the current review period compared with the previous review period. Spending during the current period was \$5,370,768 (14% of total expenditure). Spending from 2010 to 2013 was slightly lower at \$5,172,994.

Some territorial authorities chose to use funding in this category to collaborate with local community and environmental groups that had received funding from the Waste Minimisation Fund.

Unspent territorial authority funds

During the current review period, territorial authorities underspent the funding they were allocated by \$8.5 million. Smaller territorial authorities report that because of their small population, the funding they receive through quarterly payments is not sufficient to engage in meaningful waste minimisation projects. As a result, these territorial authorities often save their funds until they have accumulated sufficient money to engage in work programmes on a more meaningful scale.

Case Study 2: Auckland Council Compost Collective

Creating a social movement to normalise and break down barriers to onsite composting

The Kaipatiki Project Environment Centre and the EcoMatters Environment Trust have been running in Auckland for a number of years, focusing on creating a sustainable Auckland and building healthy environments together with the community. These programmes have now pooled their resources with the Auckland Council to form the Compost Collective.

The programme was initiated through seed funding from the Auckland Council Waste Minimisation and Innovation Fund (WMIF), which is part-funded by levy funding. Funding for subsidised compost systems offered on this site is provided through the Auckland Council compost programme budget.

In the first 15 months, this programme has engaged with a total of 15,000 people across Auckland:

- 8,500 people trained face-to-face
- 6,500 people engaged at markets and events
- 1,200 likes on Facebook
- 1,000 views on Instagram
- 407 activities delivered.

▶▶ We're here to inform and engage as many people as we possibly can about the benefits of composting and to help people reduce their kerbside waste. We want to entertain, engage, empower and encourage the community to learn about smart gardening, food/waste prevention and waste minimisation. ◀◀



The programme developed a digital platform to form the foundation for the programme. It provides digital information and data collection capabilities and includes social networking, a bespoke calendar with all workshops listed, and enables workshop facilitators to track participants accurately.

The platform has electronically published a number of existing resources in 11 different languages. Instructional videos have been developed and online tutorials covering three basic composting systems are available. The conclusion of the tutorials offers a quiz to test the participants' knowledge and provides a discount for purchasing subsidised composting systems.

The programme funds 18 community-based composting facilitators across the four main urban areas in Auckland – North/Shore, Urban West, Central and Urban South.

Achievement of outcomes

The Ministry has confidence that territorial authorities are spending allocated funding in alignment with their waste management and minimisation plans.

Key findings

Key findings of this review are listed here.

- The levy collector allocated \$46.1 million dollars of funding to territorial authorities.
- Territorial authorities spent the largest proportion of funding on services projects.
- \$8.5 million (18.4% of the total) was yet to be spent at the end of the current review period.

Observations

The Ministry is confident that territorial authorities are spending their levy funding appropriately; however, reporting frameworks to date have not required additional data and information about the success of projects or progress towards waste minimisation objectives.

The ongoing absence of baseline data makes it impossible to accurately examine improvements to waste minimisation infrastructure and services as specified in outcome 6 of the framework. The introduction of a designated waste data framework to strategise and coordinate the collection, analysis and maintenance of territorial authority waste data would provide an effective solution to this problem.

Some less populous territorial authorities that receive smaller funding allocations have reported an underspend because they are accumulating funding to finance larger projects that will bring about more meaningful waste minimisation results.

Smaller territorial authorities could consider applying to the Waste Minimisation Fund for larger projects.

Outcome achievement ratings

The following table shows ratings for achievement of outcomes in the waste disposal levy outcomes framework.

Key	Complete 	In progress 	No progress 	Progress unknown 
Outcome				Rating
4.	Funds are allocated to territorial authorities (and spent on matters to achieve and promote waste minimisation)			
5.	Funds are allocated to projects (to promote or achieve waste minimisation)			
6.	Waste minimisation infrastructure and services are improved			
7.	Waste minimisation is encouraged and promoted			

The Waste Minimisation Fund

The Waste Minimisation Fund is a contestable fund designed to support business and community waste minimisation projects. The fund is constituted from residual levy revenue after half the revenue has been distributed to territorial authorities and administration costs have been deducted.

Waste Minimisation Fund allocation

The levy collector allocated \$40.9 million to the Waste Minimisation Fund in the current review period.

Total value of funding distributed to
the Waste Minimisation Fund: **\$40.9m**

Administration of the fund

Ministry for the Environment holds up to two contestable funding rounds a year to distribute waste minimisation funding. For each round, an independent assessment panel is convened to assess submitted projects against Waste Minimisation Fund criteria that include:

- strategic value (likelihood that a project will act as a catalyst to increase the uptake of waste minimisation)
- harm reduction
- ongoing wider benefits (economic, environmental, social and cultural).

As part of the approval process, applicants must demonstrate their ability to deliver their project successfully and to describe how the project will continue after waste minimisation funding ends. The full list of Waste Minimisation Fund assessment criteria is shown in [appendix E](#).

All waste minimisation funding decisions are approved by the Minister in accordance with section 38 of the Act, which provides for the Minister to ‘approve funding of any project to promote or achieve waste minimisation’. In making funding decisions, the Minister must consider the fund criteria and may consider any other matters that he or she thinks are relevant.

Project applications and approvals

The Waste Minimisation Fund attracts considerable interest, and total funding sought for projects usually exceeds the amount of funding available. In the current review period, the Waste Minimisation Fund received 212 project applications totalling \$160 million. Of this, 211 applications were eligible requesting a total of \$154,444,110.

The Minister approved funding for 66 projects (31% of applications received) compared with 70 projects approved between 2010 and 2013 – a decrease of 5.6%. A full list of projects for which Waste Minimisation Fund funding was approved is shown in [appendix F](#).

Number of projects approved: **66**

Total funding approved for Waste Minimisation Fund projects during the current period was \$40.6 million. This is 9% less than the last review period during which \$44.6 was approved.

Total value of funding for projects approved: **\$40.6m**

Table 13 provides a summary of project applications received and approved by the Minister during the five funding rounds for which funding was approved during the current review period.

Table 13: Summary of Waste Minimisation Fund rounds for 2013 to 2015

Funding round	Eligible applications received	Total funding requested	No. of projects approved	Total funding approved
*May 2013	67	\$38,464,737	16	\$7,700,415
August 2014 - TV Takeback (TVTB)	2	\$10,217,008	1	\$4,845,403
May 2014	56	\$53,529,589	17	\$3,319,891
May 2015	43	\$15,357,475	17	\$5,228,217
October 2015 (End-of-life tyre round)	43	\$36,875,300	15	\$19,541,021
Total	211	\$160,144,109	66	\$40,634,947

*Although this funding round was prior to the current review period, the project funding was approved and allocated in the current review period.

To date, the Minister has not had to decline a project because of limitations in the size of the fund. Common reasons for declining projects include duplication of previously funded project/s, insufficient co-funding arrangements for a project, high risk projects, and lack of alignment with waste minimisation priorities ([appendix G](#)).

Funding approved by project value

The current Waste Minimisation Fund criteria do not explicitly indicate a preference for any size or value of project except to limit the minimum grant for feasibility studies to \$10,000 and the minimum grant for other projects to \$50,000.

During the current review period, nearly two-thirds of the funding allocated (\$25 million) was for projects valued at more than \$2 million. Figure 13 shows the proportion of funding allocated by project value.

Figure 13: Proportion of Waste Minimisation Fund funding allocated by individual project value

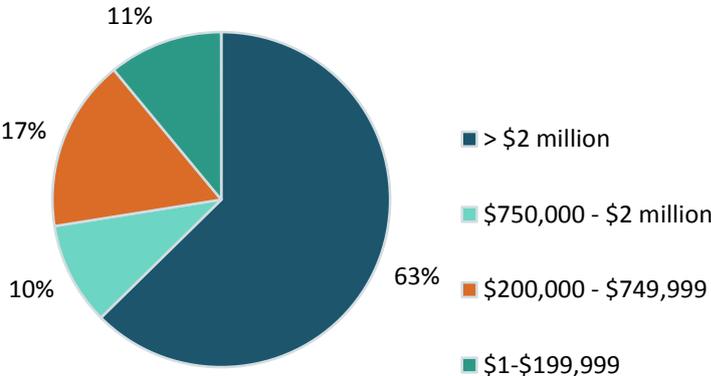


Table 14 shows approved projects grouped by project value with the number of projects and total funding allocated for each group.

Table 14: Funding for Waste Minimisation Fund projects approved by individual project value

Project value	No. of projects	Amount approved
> \$2 million	4	\$25,430,893
\$750,000 – \$2 million	4	\$4,021,314
\$200,000 – \$749,999	16	\$6,737,153
\$10,000 – \$199,999	42	\$4,445,587
Total	66	\$40,634,947

During the current review period, 62% of waste minimisation funding was allocated to four projects valued at more than \$2 million.

Proportion of Waste Minimisation Fund
allocated to projects >\$2 million: **62%**

Funding approved by project category

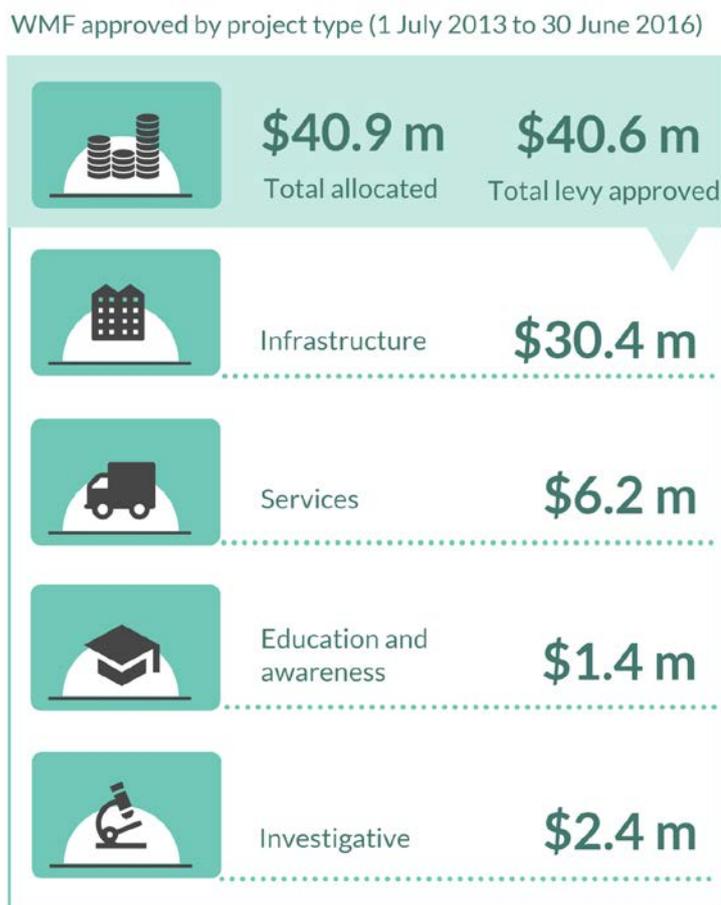
Projects seeking funding from the Waste Minimisation Fund are grouped under four functional categories for reporting purposes. These groups are as follows.

Table 15: Waste minimisation project categories

Category	Description
Infrastructure	Projects that deliver infrastructure that directly contributes to waste minimisation
Services	Projects that deliver services that directly contribute to waste minimisation
Investigative and feasibility	Projects that encourage investment in large-scale, new and innovative waste minimisation projects, including feasibility studies, research and development, proof of concept, and other investigative projects that will contribute to improvement of waste minimisation infrastructure and services in the longer term
Education and awareness	Projects that are expected to result in improvements in New Zealanders’ awareness of, and participation in, waste minimisation activities

Figure 14 shows the amount of funding approved for each project type in the current review period.

Figure 14: Waste Minimisation Fund funding approved by project type



Note: Totals for each category have been rounded for illustrative purposes.

Of the four project categories, infrastructure projects received the largest proportion of funding (\$30.4 million). This equates to 74% of total waste minimisation funding allocated.

Priority waste streams

In 2013, the Ministry prioritised waste streams to support the New Zealand Waste Minimisation Strategy goals and the Government's focus for the environment. Prioritisation of waste streams is based on three criteria: risk of harm, quantity of waste, and benefits from minimisation. The result is a simple rating that assigns each waste stream to one of five priority groups: very high priority; high priority; medium priority; low priority; and unknown. (A full list of priority waste streams organised by priority group is shown in [appendix G.](#))

The scoring tool used by the Waste Minimisation Fund assessment panel considers the priority of a waste stream when assessing projects for funding with projects that address high-priority waste streams being scored more highly. The Waste Minimisation Fund is still open to innovative projects that address lower priority waste streams, but higher priority waste streams take precedence.

Table 16 shows the amount of funding approved for each waste priority group and waste stream during the current review period.

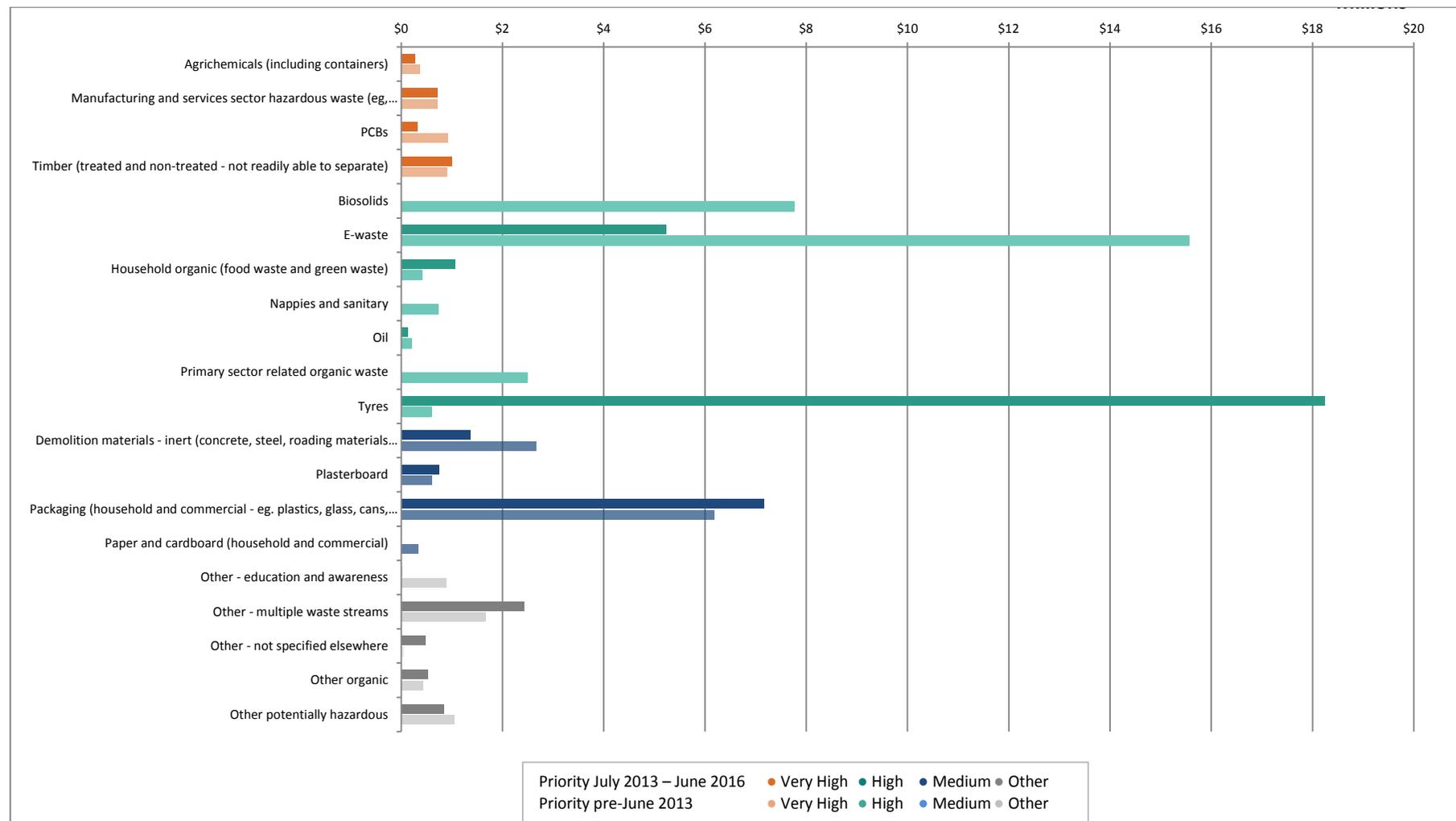
Table 16: Waste Minimisation Fund funding allocated by waste stream and priority group during the current review period

Priority group	Waste stream	Funding
Very high	Agrichemicals (including containers)	\$279,929
	Manufacturing and services sector hazardous waste (eg, aluminium processing waste)	\$724,097
	PCBs	\$324,166
	Timber (treated and non-treated – not readily able to separate)	\$1,005,914
	Priority group total	\$2,334,106
High	Biosolids	\$0.00
	E-waste	\$5,240,943
	Household organic (food waste and green waste)	\$1,075,508
	Nappies and sanitary	\$0.00
	Oil	\$141,588
	Primary sector related organic waste	\$0.00
	End-of-life tyres	\$18,250,816
	Priority group total	\$24,708,855
Medium	Demolition materials – inert (concrete, steel, roading materials etc.)	\$1,372,000
	Plasterboard	\$750,000
	Packaging (household and commercial – eg. plastics, glass, cans, polystyrene)	\$7,173,546
	Paper and cardboard (household and commercial)	\$0.00
	Priority group total	\$9,295,546
Low	Cleanfill	\$0.00
	Furniture	\$0.00
	Textiles	\$0.00
	Priority group total	\$0.00
Other (assessed on a case-by-case basis)	Other – education and awareness	\$15,000
	Other – multiple waste streams	\$2,427,840
	Other – not specified elsewhere	\$480,000
	Other organic	\$528,000
	Other potentially hazardous	\$845,600
	Priority group total	\$4,296,440

As the table shows, the large majority of funding allocated to projects during the current review period addressed waste streams in the 'High priority' group, although a large proportion of this was for end-of-life tyres. Funding allocated to waste streams in the Very High group received only 5.7% of total funding allocated. High priority waste streams received 60.8% of funding with Medium priority waste streams receiving 22.8% of funding.

Figure 15 shows the level of funding allocated to priority waste streams by priority group before and after implementation of waste stream prioritisation, that is pre- and post-July 2013.

Figure 15: Waste Minimisation Fund allocation by priority waste stream before and after implementation of the priority waste assessment tool



Targeted funding rounds

In October 2015, the Minister held a targeted funding round (the only one in the current review period) which focused on end-of-life tyres. This approach signalled to stakeholders that the Government considered end-of-life tyres to be a high priority waste stream and that the Ministry for the Environment was targeting this issue. The targeted round attracted 25 tyre specific applications; 10 projects were funded.

As a result, funding for projects addressing end-of-life tyres increased from less than \$1 million from 2010 to 2013 to more than \$18 million in the current period. The surge in projects to address end-of-life tyres is an example of the way in which Ministry's signalling of priority waste streams can prompt action in the waste sector.

Funding approved by waste stream

The Levy Regulatory Impact Statement notes a policy intention to direct funding towards waste streams where infrastructure and services are currently lacking or where, historically, recovery rates have been low. Waste Minimisation Fund criteria do not explicitly state a preference for specific waste streams, but do indicate a preference for projects that can demonstrate a greater reduction in harm to the environment and/or show a greater reduction in the quantity of waste disposed to landfill.

Table 17 describes waste stream categories funded during the current period and shows the number of eligible applications received and projects approved in each category.

Table 17: Waste Minimisation Fund project applications received and approved for each waste stream category during the current review period

Waste stream category	Description	Applications received	Projects approved
Organic	Includes garden and kitchen waste, food process wastes, and sewage sludge. Sewage sludge is a by-product of sewage collection and treatment processes	46	10
Packaging	Includes glass, paper and plastics	26	6
Construction and demolition	Waste arising from construction and demolition activities, including concrete, plasterboard, wood, steel, brick, and glass	13	6
Hazardous	Materials that are flammable, explosive, oxidising, corrosive, eco-toxic, radioactive, or infectious.	13	8
End-of-life tyres	Used and unwanted tyres	37	12
E-waste	Discarded, surplus, obsolete, or broken electrical or electronic equipment (also known as electronic waste, e-scrap, or waste electrical and electronic equipment (WEEE))	12	4
Timber	Wood treated with leaded paint, CCA pressure treated, penta or creosote coated wood, or any type of pesticide or fungicide treated wood as well as untreated wood	12	3
Litter	Waste that is improperly disposed of, without consent, at inappropriate locations. Objects, often man-made, include aluminium cans, cardboard boxes or plastic bottles	0	0
Multiple waste streams	Includes two or more of the waste streams listed above	18	9
Other	Includes residual solid waste not otherwise classified, textiles, resins, etc.	34	8
Total		211	66

The Waste Minimisation Fund received the largest number of eligible applications (46) for projects seeking to minimise organic waste. However, only 21% (10) of these projects were approved for funding. The next largest number of applications was for projects seeking to minimise end-of-life tyre waste with 37 applications. Of these, twelve projects (30%) were approved for funding.

The waste stream with the highest proportion of projects funded was hazardous waste with 62% of applications being funded. The waste stream with the next highest proportion of approved projects was the multiple waste streams category at 50%.

Proportion of hazardous waste projects funded: **62%**

Figure 16 shows the proportion of projects approved versus those declined during the current review period for each waste stream.

Figure 16: Number of Waste Minimisation Fund projects approved and declined by waste stream category

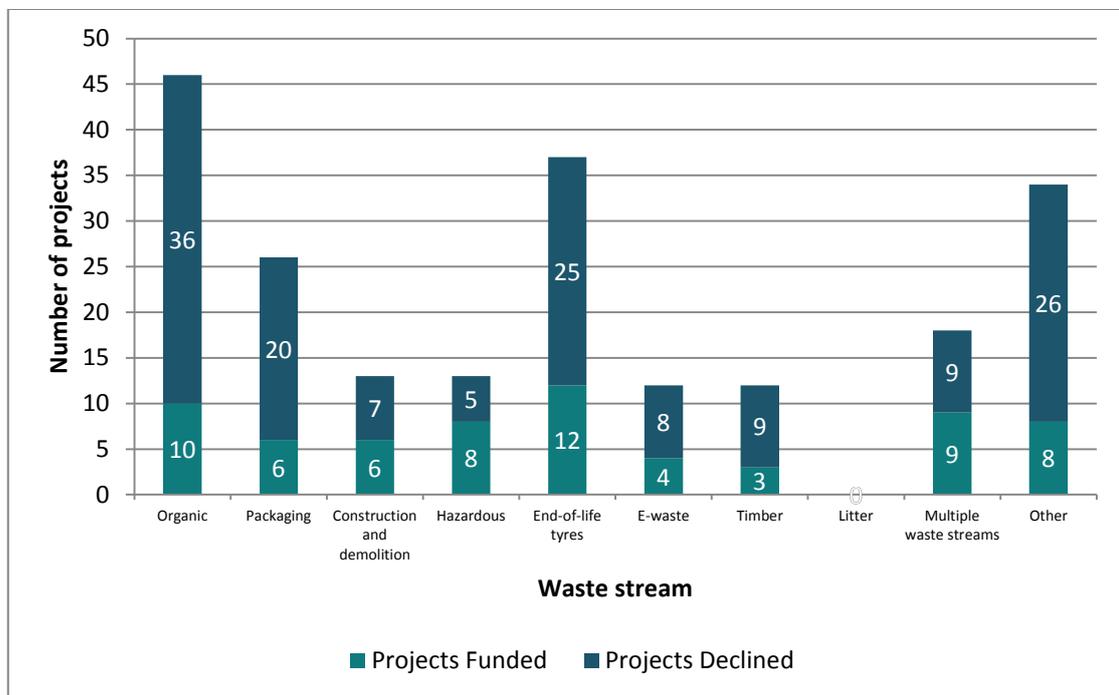


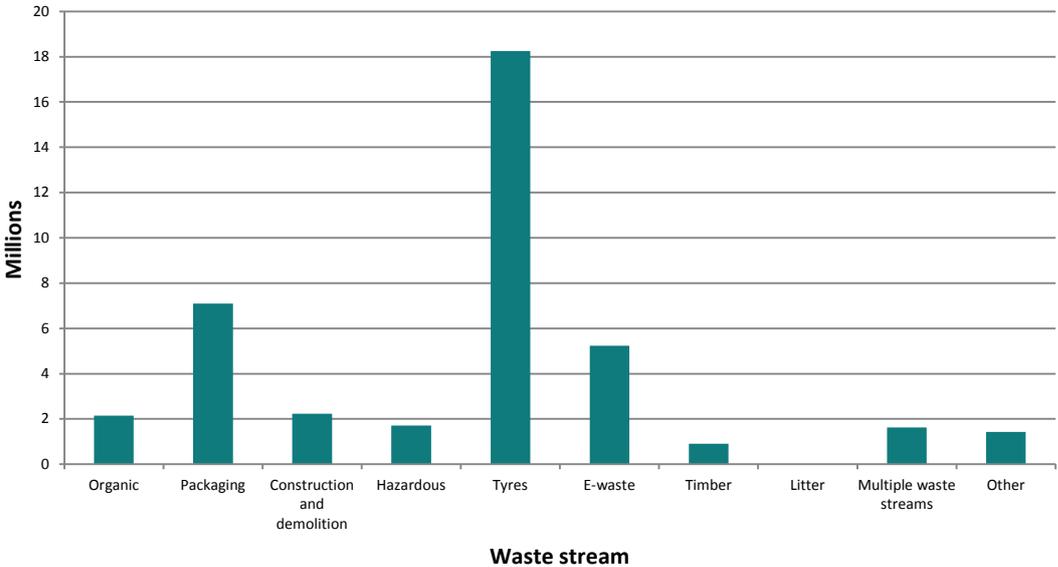
Table 18 shows the amount of funding allocated to approved projects by waste stream category.

Table 18: Waste Minimisation Fund allocation by waste stream category

Waste stream	Total funding approved
Organic	\$2,146,691
Packaging	\$7,099,083
Construction and demolition	\$2,227,000
Hazardous	\$1,714,780
End-of-life tyres	\$18,250,816
E-waste	\$5,240,943
Timber	\$900,914
Litter	\$0
Multiple waste streams	\$1,629,120
Other	\$1,425,600
Total	\$40,634,947

Figure 17 shows waste minimisation funding allocated by waste stream category during the current review period.

Figure 17: Waste Minimisation Fund allocation by waste stream category



Infrastructure projects by waste stream

The Minister approved \$30.4 million of Waste Minimisation Fund funding to be spent on infrastructure projects during the current review period. This compares with \$22.6 million approved from 2010 to 2013. Approved projects included facilities to address end-of-life tyres, and waste streams in the packaging and construction and demolition categories.

Table 19 shows waste stream categories targeted by infrastructure projects and the amount allocated to each category.

Table 19: Waste Minimisation Fund allocated to infrastructure projects by waste stream

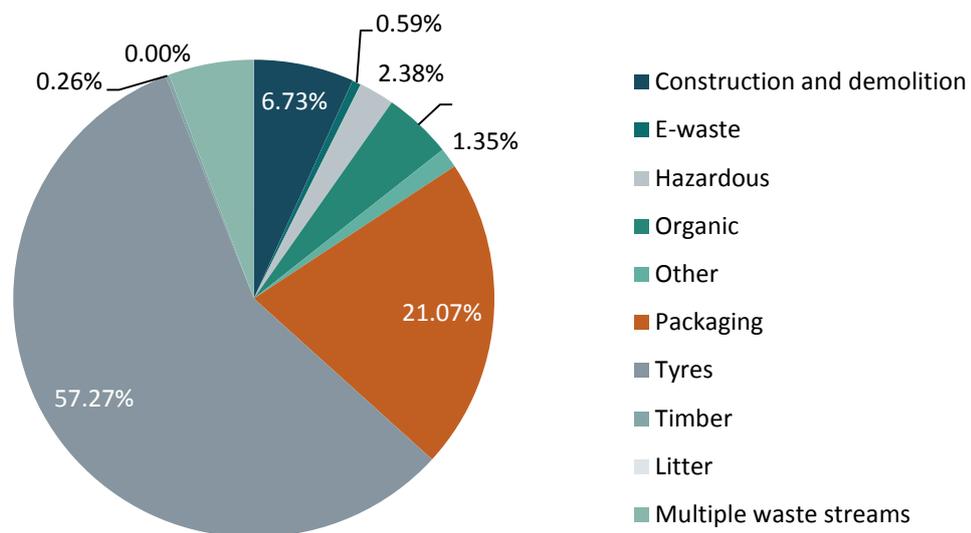
Waste streams for infrastructure projects	Total funding allocated
Construction and demolition	\$2,045,000
E-waste	\$177,940
Hazardous	\$724,097
Organic	\$1,400,646
Packaging	\$6,398,153
End-of-life tyres	\$17,390,416
Other	\$410,000
Timber	\$856,314
Litter	\$0
Multiple waste streams	\$962,058
Total	\$30,364,624

End-of-life tyres received the largest proportion of infrastructure project funding at \$17,390,416 or 57% of the total funding approved during the current review period. Examples of infrastructure projects funded through the Waste Minimisation Fund include:

- an organic waste recycling and recovery plant in Napier – BioRich Limited
- a resource recovery plant in Auckland – CID Resource Recovery Limited
- a commercial industrial sorting facility (CIF) in Blenheim – Marlborough District Council.

Figure 18 shows the proportion of funding allocated to infrastructure projects for all waste stream categories.

Figure 18: Proportion of Waste Minimisation Fund allocated to infrastructure projects by waste stream category



Services projects by waste stream

The Minister approved \$6.2million to be spent on services projects during the current review period compared with \$12.4 million in the previous review period. Approved projects included services to address e-waste, hazardous waste, organic waste and packaging waste stream categories. Table 20 shows waste streams targeted by services projects and the amount allocated to each project.

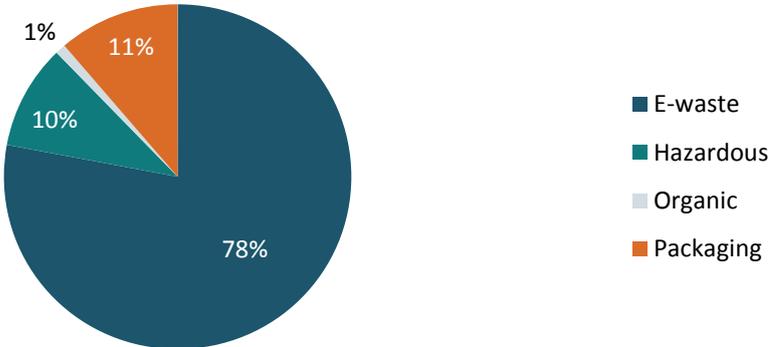
Table 20: Waste Minimisation Fund funding allocated to services projects by waste stream categories

Waste streams for services projects	Total funding allocated
E-waste	\$4,845,403
Hazardous	\$608,517
Organic	\$60,000
Packaging	\$700,930
Total	\$6,214,850

Among services projects, the e-waste project received the largest proportion of funding at \$4,845,403 or 78% of the total approved funding for services projects.

The following chart shows the proportion of funding approved for services projects for all waste stream categories.

Figure 19: Proportion of Waste Minimisation Fund funding approved for services projects by waste stream category



Education and awareness projects

The Waste Minimisation Fund allocated funding for projects that raise the public’s awareness about issues associated with waste and projects that encourage and promote waste minimisation. Through these campaigns, the Waste Minimisation Fund seeks to support all New Zealanders to adopt strategies and behaviours that divert valuable resources away from landfills.

During the current review period, the Waste Minimisation Fund allocated \$1,479,918 to projects focused on education and awareness. Data from completed projects indicate that funding has resulted in outputs that promote and encourage waste minimisation. These include websites, media coverage, community initiatives and events, and educational programmes and resources. Fifty-four of the 84 projects completed during the current and last review periods stated that they had increased waste minimisation awareness.

Case Study 3: Love Food Hate Waste National Food Waste Campaign

Taking a national approach to reducing food waste

Love Food Hate Waste is a behaviour change campaign aimed at minimising household food waste. WasteMINZ has combined forces with 51 councils across New Zealand, supported by the Waste Minimisation Fund and contributions from council's waste disposal levy allocation, to roll out the campaign. The campaign broke new ground in New Zealand by focusing on tackling organic waste from the top of the food recovery hierarchy.

Over the three years (2016 – 2019), the campaign aims to:

- create and promote a Love Food Hate Waste New Zealand website to act as an online hub for food waste minimisation messages and related activity
- produce a series of Love Food Hate Waste NZ marketing collateral (flyers, fact sheets, media releases) to support councils and partner organisations to promote food waste minimisation messages
- deliver a national social media campaign by 2019, with a predominantly digital focus to promote minimisation of household food waste disposed of to landfill.

- » national collaboration
- » regional support
- » waste reduction
- » behaviour change



The campaign has already raised awareness and continues to change behaviour on the issue of food waste. It provides households with solutions and advice on minimising their food waste by adapting and using resources created and proven to be successful overseas. In its first year, the campaign reached thousands of followers through various social media outlets:



22,727 followers
users

1,304 followers

2,184 followers

155,886 unique

23 posts

51 posts

11 posts

216,397 sessions

569,832 impressions

21,574 impressions

382,586 page views

4,113 engagements

401 engagements

Performance of projects

Successful Waste Minimisation Fund recipients sign a funding deed with Ministry for the Environment agreeing to the requirements and expectations of project delivery stated in their project plans. Results from project reports and audits under the Ministry's Compliance Assurance Programme indicate levy spending is largely compliant with requirements specified in funding deeds. At the time of reporting, only one audit showed a major compliance issue associated with funding expenditure where intervention was required. All issues (minor or major) identified through reports and audits have been satisfactorily resolved with relevant fund recipients.

Waste Minimisation Fund recipients report their progress to the Ministry only during the life of their funding deed. Often, a project may not start diverting substantial quantities of waste until after funding has ceased. As a result, quantities of diverted waste are often small while a project is being established. At present, data is not available to report on tonnes of waste minimised from completed projects as this data is not collected.

Unspent and returned funding

Waste minimisation funding is paid on completion of agreed milestones rather than as an upfront payment at the start of a project. Milestones are staged over the life of a project, which can be up to three years. The rolling nature of waste minimisation funding produces variation in the total amount of funding approved by the Minister and the amount of funding paid to recipients during any given funding period. Of the \$40.6 million approved for projects during the current review period, around 38% of this funding was yet to be spent at 30 June 2016.

At the end of the current review period, forty projects were still in progress and yet to spend all funding allocated to them. Table 21 shows the status of these projects, the amount of funding approved for their completion and the amount of funding unspent as at 30 June 2016.

Table 21: Approved but unspent Waste Minimisation Fund funding for projects in progress at 30 June 2016

Project status	No. of projects	Amount approved	Amount paid	Amount unspent
Projects at stage 1 (not yet officially in deed)	1	\$12,684,985	\$0	\$12,684,985
In progress projects	39	\$17,328,844	\$6,826,774	\$10,502,069
Total (current period)	40	\$30,013,829	\$6,826,774	\$23,187,054

Occasionally, a project may be completed as per the requirements of its project plan and funding deed without spending all the funding allocated to it. When this happens, the unspent funding is returned to the Waste Minimisation Fund and reallocated to new projects during the next contestable funding round.

At 30 June 2016, 17 projects for which funding had been approved during the current period had been completed. These projects accounted for approximately 26% of funding approved during the current review period. Table 22 shows funding approved, paid and unspent for completed projects.

Table 22: Funding approved but unspent for Waste Minimisation Fund projects completed during the current review period

Project status	No. of projects	Amount approved	Amount paid	Amount unspent
Completed projects	17	\$8,611,519	\$8,479,698	\$131,820

Each year, a number of approved projects fail to deliver milestones agreed with the Ministry, leading them to be discontinued. Also, some projects approved for funding may be withdrawn even before they start if problems arise during project planning and funding deed negotiation that deem these projects unfeasible.

Because discontinued projects are terminated before they begin, Waste Minimisation Fund allocated to them remains unspent. Unspent funding for discontinued and withdrawn projects is returned to the Waste Minimisation Fund to be reallocated to new projects during the next contestable funding round.

Table 23 shows the number of discontinued and withdrawn projects with the amount of funding approved for the projects, the amount paid and the amount remaining unspent.

Table 23: Amount of funding approved, paid and unspent for discontinued and withdrawn Waste Minimisation Fund projects during the current review period

Project status	No. of projects	Amount approved	Amount paid	Amount unspent
Discontinued projects	1	\$291,985	\$0	\$291,985
Withdrawn projects	8	\$1,717,614	\$0	\$1,717,614
Total projects	26	\$10,621,118	\$8,360,425	\$2,260,692

Table 24 shows the total amount of funding approved, paid and unspent for all completed, in progress, discontinued and withdrawn projects as at 30 June 2016.

Table 24: Funding approved, paid and unspent during the current review period for completed, in progress, discontinued and withdrawn Waste Minimisation Fund projects at 30 June 2016

Project status	No. of projects	Amount approved	Amount paid	Amount unspent
Grand Total	66	\$40,634,947	\$15,306,473	\$25,328,473

As the table 24 shows, approximately 38% of funding approved during the current review period had been paid while 62% remained unspent at 30 June 2016.

Achievement of outcomes

The current review records improvements in a number of areas raised during the 2014 review period.

Key findings

Key finding of this review are listed below.

- 212 applications were received and just one (0.5%) was ineligible for consideration.
- The \$40.6 million of funding was approved for 66 projects.

- The number of individual projects funded that had a value of more than \$2 million has increased.
- One targeted funding round (for end-of-life tyres) was run during the current review period and this successfully attracted large scale, onshore focused applications.

Observations

At present, the Waste Minimisation Fund does not have an overarching investment strategy. As a result, with the exception of targeted funding rounds, the types of projects submitted and approved are applicant-driven rather than following a planned approach to address specific problem waste streams or waste issues. Two successful targeted funding rounds (one in the previous review period) have shown what can be achieved when the Ministry sends a strong signal about the waste stream that is currently in focus. An overarching strategy for the Waste Minimisation Fund would enable the Ministry to follow a structured and planned approach to scale-up the impact of the investment.

As with other areas of the levy, information and data surrounding the Waste Minimisation Fund remain problematic. Project owners are not required to report on their ongoing success once projects fulfil the requirements of their funding deeds. Many projects (particularly those for establishing infrastructure) rarely achieve their optimum operational efficiency until after they are complete. This means the Ministry often misses out on key information about waste diversion quantities and other project successes. This information would provide useful guidance to the Waste Minimisation Fund assessment panel when making future decisions about similar projects. A regular evaluation of past Waste Minimisation Fund projects (at the two- and five-year mark, maybe) would provide this valuable data to inform the assessment panel on future projects.

Outcome achievement ratings

The following table shows ratings for achievement of outcomes in the waste disposal levy outcomes framework.

Key	Achieved 	In progress 	No progress 	Progress unknown 
Outcome				Rating
5:	Funds are allocated to projects (to promote or achieve waste minimisation)			
6:	Waste minimisation infrastructure and services are improved			

Part 3: Cost of waste disposal

The Waste Minimisation Act states the second purpose of the levy as being ‘to increase the cost of waste disposal to recognise that disposal imposes costs on the environment, society and the economy’. The levy is designed to operate as an incentive to those who generate waste to reduce, reuse or recycle it.

This part assesses achievement of the following outcomes of the waste disposal levy outcomes framework.

- *Outcome 3: The cost of waste disposal is increased (to recognise that disposal imposes costs on the environment, society and the economy).*
- *Outcome 8: The public appropriately responds to price signals.*

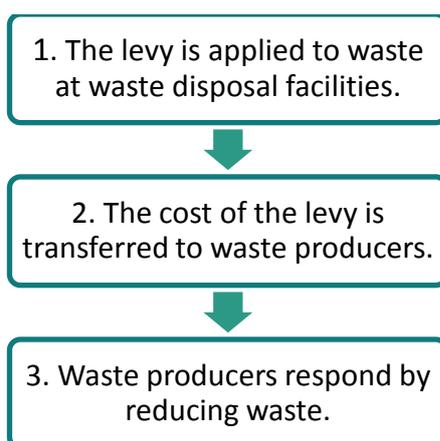
The cost of waste disposal is increased

The levy was introduced in 2009. At that time, the rate of the levy was set in accordance with Section 27 of the Waste Minimisation Act, which prescribes that, where no rate is set, the rate shall be \$10 per tonne. As no rate was set for the levy at, or since, its inception, the rate has remained unchanged at \$10 per tonne.

Research has not yet been undertaken to find out whether members of the public are aware that a levy has been imposed to increase the cost of their municipal waste.

The public appropriately responds to price signals

In the year to 30 June 2016, New Zealanders produced an average of 734 kg of waste per person. For the levy to function effectively as a price signal for waste minimisation, the levy needs to be passed on transparently from the waste disposal facility through any intermediaries to the waste producer (the householder or business). Added to this, the cost of waste disposal needs to be transferred in a way that waste minimisation behaviour produces a direct and meaningful reduction in costs of disposal to the person or entity producing the waste. The simple chain of events, where costs are transferred from the levied waste disposal facility to the waste producer is often portrayed as follows.



This chain of cause and effect describes a perfect system in which all waste producers are equal and respond perfectly to cost as an incentive to reduce waste. However, this chain disregards a wide variety of factors, few of which are listed below, that may hinder success.

- Price signals must be sufficiently large to provide an incentive to encourage waste reduction.

- Price signals must be handed down directly from a waste disposal facility to the waste producer.
- Waste producers will respond differently based on their willingness and ability to absorb the cost of the levy.
- Alternative to disposal must be available to enable the waste producer to avoid disposal.
- Non-wasteful and fully reusable or recyclable products and services must be available as alternatives to wasteful products.
- Opportunities to avoid the levy, such as non-levied waste disposal facilities, need to be minimised.
- The cost of alternatives to disposal (including costs in money, time and effort) need to be recognised for different waste streams.

During the current review period, levied waste disposal facilities received 10,681,295 tonnes of gross waste of which 9,473,509 tonnes was sent to landfill – a 20.1% increase on net waste to landfill reported for the previous review period.

As mentioned above, research is yet to be done to ascertain whether members of the public are aware that a levy is being imposed on their municipal waste. An analysis as to whether the levy at its current rate is providing a price signal sufficient to stimulate an appropriate response from the public would also seem sensible.

Note: Producers of an estimated 70% of waste that goes to 381 landfills across New Zealand are not subject to any price signals that would encourage them to reduce their waste.

Achievement of outcomes

Outcome 3 of the waste disposal levy outcomes framework has not been achieved during the current review period. The cost of waste has not increased since the introduction of the levy. In addition, Outcome 8 has not been achieved. A 20.1% increase in net waste to landfill during the current period indicates that the public is not responding appropriately to price signals to reduce waste.

Key findings

Key findings of this review are listed as below.

- The cost of waste remains unchanged since 2009.
- Net waste has increased 20.1% during the current period indicating that the public is not responding appropriately to price signals produced by the waste levy.

Observations

A wide variety of factors can intervene to block the price signal introduced by the levy to encourage the public to reduce waste. The waste levy represents only a small proportion of the total cost of waste disposal therefore the incentive to minimise waste is diminished.

Outcome achievement ratings

The following table shows ratings for achievement of outcomes in the waste disposal levy outcomes framework.

Key	Achieved 	In progress 	No progress 	Progress unknown 
Outcome				Rating
3. The cost of waste disposal is increased (to recognise that disposal imposes costs on the environment, society and the economy).				
8. The public appropriately responds to price signals.				

Part 4: Achieving Waste Minimisation

Part 4: Achieving waste minimisation reports on progress towards the long-term outcomes expected if the levy is operating effectively.

This part reports on achievement of the following outcomes of the waste disposal levy outcomes framework.

- *Outcome 9: People dispose less waste and minimise more waste, particularly harmful waste.*
- *Outcome 10: Waste minimisation achieved.*

Assessing waste minimisation

As mentioned throughout this report, the only reliable data about waste that the Ministry has access to, comes from the 45 levied waste disposal facilities. These facilities receive an estimated 30% of New Zealand's total waste disposed to the land. The Ministry does not have access to data from the remaining estimated 70% waste disposed at 381 known, consented landfills or at uncontrolled environments like farm dumps.

One measure of whether people are disposing less waste is to calculate per capita waste production. Table 25 shows annual levied waste production per capita at the end of each levy review period.

Table 25: Annual levied waste production per capita at the end of each review period

	Year to 30 June 2010 (2011 Review)	Year to 30 June 2013 (2014 Review)	Year to 30 June 2016 (2017 Review)
Waste (net tonnes)	2,673,048	2,692,901	3,379,546
Population	4,304,900	4,410,700	4,599,300
Kilograms of waste per capita	620	610	734

Although annual per capita waste production decreased slightly between the 2010 and 2014 reviews, it increased significantly between the last review and the current review. In the year to 30 June 2013, each New Zealander was producing on average about 610kg of levied waste each year. By 30 June 2016, annual per capita levied waste production had increased to 734kg. Thus, annual levied waste production has increased by 124kg (20.3%) per person in the seven years since the introduction of the levy.

Another way of measuring changes in waste minimisation is to measure waste production against GDP, which shows the efficiency of production as related to waste. Table 26 shows annual levied waste production per billion dollars of GDP at the end of each levy review period.

Table 26: Annual levied waste production per billion dollars of GDP at the end of each review period

	Year to July 2010 (2011 Review)	Year to July 2013 (2014 Review)	Year to July 2016 (2017 Review)
Waste (net tonnes)	2,673,048	2,692,901	3,379,546
GDP (\$billion)	189.6	213.2	241.9
Tonnes of waste per \$billion of GDP	14,098	12, 631	13,971

Annual waste production per billion dollars of GDP decreased between the 2010 and 2014 levy reviews; however, it returned to its 2010 high at the end of the current review period. In the year to July 2013, waste was being produced at a rate of 12,631 tonnes per billion dollars of GDP. By the end of the year to July 2016, this rate had increased to 13,971 tonnes of waste per billion dollars of GDP, an increase of 1,340 tonnes per billion dollars GDP, or 10.6%.

Diversion, reuse, recycling and recovery

The success of waste minimisation activities can also be measured by looking for increases in the amount of resources diverted, reused, recycled and recovered. Unfortunately, data and information about diversion of resources is sparse. This section reviews the available information about diversion through:

- territorial authority levy-funded activities
- Waste Minimisation Fund activities
- accredited product stewardship schemes
- levied disposal facilities.

Diversion through territorial authority levy-funded activities

During the current review period, territorial authorities reported an estimated 168,647 tonnes of waste had been reused, recycled and recovered through activities that were partly or fully funded through levies they received. This is just an estimate, as data collected from territorial authorities is not consistent enough to aggregate and provide a true representation of the quantities reused, recycled and recovered.

Case Study 4: Marlborough Resource Recovery Centre

Resource Recovery Centre springboards the region into a new 'recycling' norm

The Marlborough Resource Recovery Centre (RRC) was developed in 2008 to provide central recycling processing capability for the region. The project resulted from a number of Solid Waste Assessment Protocol studies that identified large volumes of recycling within the domestic waste streams currently going to landfill. The establishment of this processing facility and the introduction of kerbside recycling collection to 14,000 households across Blenheim and Picton took a couple of years to gain community approval through the council's Annual Plan process. Since 2010, the RRC has continued to develop with the introduction of additional infrastructure in the form of glass storage bunkers, a reuse centre, an e-waste collection facility and a salvage yard. The Council utilises 100% of the funding received from the waste disposal levy (approx. \$135,000 pa) to support the ongoing operation of the RRC.

The RRC has provided the community with an alternative to landfill and has made them rethink their approach to disposal in other areas such as household goods and furniture. The reuse shop provides the last drop off point for the community with goods being resold back into the community where there is a definite need or interest.

- ▶▶ infrastructure development
- ▶▶ onshore solutions
- ▶▶ closed loop
- ▶▶ beneficial reuse
- ▶▶ local economic growth



The project has created up to 10 full time equivalent employees (FTEs) jobs so far at the site and an additional eight jobs on the kerbside recycling collection routes. The construction of the resource centre and other facilities were all undertaken by the Marlborough building industry.

After establishing the central processing base, the Council was able to roll out domestic recycling collection at the region's six transfer stations. In the past couple of years, the council has included the Rural Community Recycling programme which sees 20m³ containers placed adjacent to schools for source segregated collection of domestic recycling. Processed volumes of recycling have risen from a few hundred tonnes prior to 2010 to over 5,000 tonnes in 2016.

The resource centre is an example of a successful partnership with the community. After overcoming initial hesitancy from the public, the facility is now heavily used by residents and businesses across the region. The initial project team worked with elected members and the community to articulate the vision of the facility and the platform that it would create. Since then, the Council has been able to build on the initial transformational project that established recycling as the new normal for the majority of the community.

The project is now receiving additional materials for recycling from the region's new waste sorting centre. These materials are being recovered from commercial, industrial and domestic waste inputs previously destined for landfill.

Diversions through Waste Minimisation Fund activities

Data from 17 completed Waste Minimisation Fund projects between July 2013 and June 2016 indicates that an estimated 23,733 tonnes of waste had been reused, recycled or recovered during each project's reporting period (usually between one and three years).

Information about waste diversion is not routinely gathered after a Waste Minimisation Fund project is complete. In addition, it is not possible to extrapolate this figure across all projects because of their diverse nature.

Diversions through accredited product stewardship schemes

The Minister for the Environment had 14 accredited voluntary product stewardship schemes during the review period. Five new schemes have been accredited in the current review period. Seven product stewardship managers have applied for waste minimisation funding to carry out projects related to the operation of their schemes.

Accredited product stewardship schemes report that they have reused, recycled or recovered approximately 1,170,942 tonnes of waste and 1,179,972 litres of liquid waste since voluntary product stewardship schemes started.

Table 27 lists all current product stewardship programmes and total tonnages and litres diverted since the programmes were accredited.

Table 27: Total tonnes and litres of waste diverted through accredited product stewardship programmes

Product Stewardship Programme	Waste
Glass Packaging Forum	Glass
Plasback	Plastic
Agrecovery Rural Recycling Programme	Agrichemicals
Agrecovery Rural Recycling Programme	Plastic
Refrigerant Recovery	Refrigerant gases
Resene Paintwise	Paint Steel
ReEntry	Carpet tiles
ROSE	Used oil
Public Place Recycling	Packaging
Fonterra Milk for Schools Recycling Programme	Tetrapaks
Re-Mobile	Mobile phones and accessories
Fuji-Xerox Zero Landfill	Electronic waste and packaging
EnviroCon	Concrete
Sharp	Electronic Waste and packaging
Total estimated tonnages diverted	1,170,942.000 (tonnes)
Total estimated litres diverted	1,179,973.000 (litres)

Diversion at levied disposal facilities

Although waste diversion rates at levied disposal facilities can be calculated by subtracting net tonnage from gross tonnage reported in the OWLS system, operators are not currently required to specify the type of waste (composition) being diverted. As a result, operators categorise diverted material as 'general' or 'unspecified' in the OWLS system and the type of waste recovered is impossible to determine.

Ministry has found through its compliance programme that waste disposal facility operators do not report in OWLS all tonnes of waste diverted at their facilities, as some material (eg, green waste, concrete, steel) is diverted before measurement as provided for by regulation. As a result, data for waste diversion is likely to be more than quantities reported.

Total waste diverted

It is not possible to ascertain the total waste diverted in New Zealand, as reliable sources of data is unavailable for this analysis to be valid. Most available waste diversion data is held by waste and recycling operators, businesses and territorial authorities. Some information is available in waste assessments prepared by territorial authorities. These are only required to be produced every six years.

Achievement of outcomes

Outcomes 9 and 10 are long-term outcomes and are affected by several factors external to the Waste Minimisation Act. Based on available information and data, the estimated 30% of the total waste stream that is disposed at levied facilities has increased since the previous review period. However, it is impossible to tell whether people are disposing less waste overall, as 70% of the picture is missing. In addition, no information is available about the disposal of harmful waste.

Key findings

Key findings of this review are listed below.

- Annual net levied waste per capita increased by 124 kg (20.3%) per person since the introduction of the levy.
- Annual net levied waste increased by 1,340 tonnes per billion dollars of GDP or 10.6%.
- Accurate data about diversion of resources from territorial authorities, Waste Minimisation Fund projects, product stewardship programmes or levied landfills is not available to Ministry for the Environment.

Observations

Substantial gaps in knowledge about waste generation, disposal, reuse, recycling and recovery in New Zealand means it is not possible to say whether there has been a reduction in the amount of total waste disposed or an increase in waste minimisation behaviour. Key factors preventing the collection of this data are listed below.

- Levied waste disposal facilities are not currently required to provide data about waste diversion, including quantities or waste stream information.
- Eighty-nine percent of New Zealand's waste disposal facilities are not required to provide any data at all.
- Territorial authorities are not required to report waste diversion data.
- Waste diversion information from Waste Minimisation Fund projects is only collected until the project is complete. This often underestimates waste diversion because project's often do not reach capacity until implementation after project completion.
- Businesses that divert waste, including resource recovery parks, are not currently required to supply information about the quantity or type of materials being diverted, often claiming commercial sensitivity.
- Data about waste going to farm dumps and incinerators is non-existent.

The lack of available data about waste reduction and waste minimisation looks set to continue in the medium term. Data collection would need to consider commercial confidentiality and an assessment of the effectiveness of voluntary verses mandatory provision of data.

Outcome achievement ratings

The following table shows ratings for achievement of outcomes in the waste disposal levy outcomes framework.

Key	Achieved 	In progress 	No progress 	Progress unknown 
Outcome				Rating
9: People dispose of less waste and minimise more waste, particularly harmful waste.				
10: Waste minimisation achieved				

Section II

Progress on 2014 Recommendations from the 2014 Review of the Effectiveness of the Waste Disposal Levy

The levy review conducted in 2014 made 11 recommendations based on key findings. The recommendations aimed to improve the way the levy is being applied, to ensure a level playing field for those paying the levy, and to improve the ability of Ministry to measure and evaluate the impact that levy funding is having on achieving waste minimisation outcomes. This section provides an update on progress against these 11 recommendations.

Summary of progress

Table 28 shows in summary the progress to date against the 11 recommendations from the 2014 levy review. Two of the recommendations have been achieved, five are in progress.

Table 28: Progress on 2014 Waste Disposal Levy Review recommendations

Key	Achieved 	In progress 	No progress 	Progress unknown 
Recommendation				Progress
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				

Actions taken

The Ministry has worked towards prioritising and addressing the 11 recommendations. The section below provides an overview of the actions and progress to date, key findings from the work undertaken and future considerations.

Part 1 Levy administration and application

Recommendations 1 and 2

1. Investigate options to ensure the levy is applied to materials in a consistent way at levied facilities.

Actions taken

- The Ministry for the Environment's performance and engagement work stream developed a compliance monitoring programme focused on communication and education to clarify the levy application to materials deposited at disposal facilities.
- Landfill guidelines were developed by the WasteMINZ Landfill Sector Group (with funding and support from Waste Minimisation Fund), to replace the Centre for Advanced Engineering guidelines which were out of date. Due to complexities, class 3 landfill classification still requires work.

Results

- The compliance monitoring programme largely resolved any ambiguity among landfill operators during review period.
- The Ministry is now satisfied with the current level of compliance to the extent that landfill operators are no longer required to have external audits to confirm compliance with the application of the levy.

Future consideration

The Ministry should continue monitoring landfill operators. If issues are identified in the future, the Ministry should consider whether the development of additional written guidance is necessary.

2. Investigate making additional waste disposal sites subject to the levy obligations .

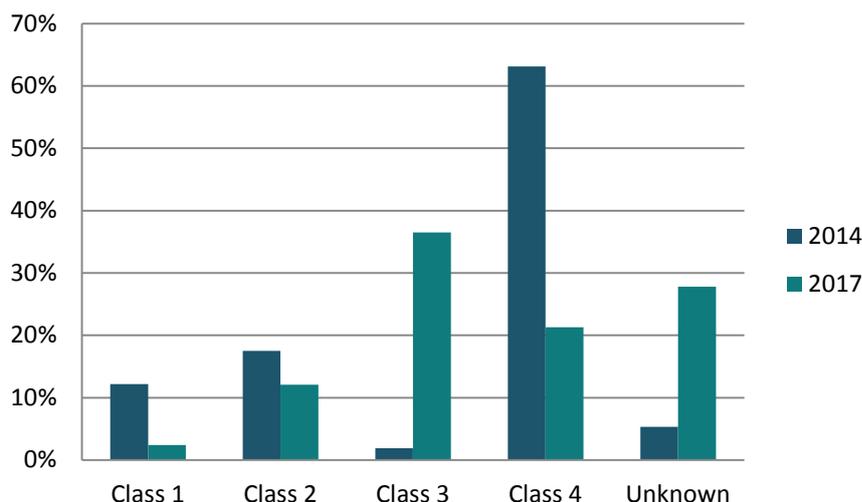
Actions taken

- In 2014, the Ministry commissioned MWH to investigate non-levied landfills across New Zealand. The objective of the investigation was to expand and update the Ministry's data and information on waste disposed of at non-levied disposal sites. The Ministry received MWH's final report: National Waste Disposal Survey Final Report (NWDS) in March 2017.

Results

- The findings from the NWDS report are presented in [appendix H](#). Below are some key findings.
- Figure 20 shows the changes between the initial survey of landfills completed by Tonkin & Taylor in 2014 and the NWDS 2017 results. Notably the decrease in the proportion of class 1 landfills (a reduction from 12% to 2%) and the increase in class 3 landfills (up from 2% to 36%).

Figure 20: Proportion of operating non-levied landfills by class: 2014 vs 2017



Landfill numbers

- New Zealand has 426 consented landfills, 45 of which are levied and 381 are non-levied. Of the non-levied landfills:
 - a) 336 landfills are confirmed as open
 - b) 45 landfills are currently of unconfirmed status.
- The number of operating, consented, non-levied disposal facilities has increased since 2014.
- Ministry does not have access to information to enable it to ascertain whether the overall number of landfills (ie, including non-consented landfills) has increased or decreased.

Waste quantity

- Only 53 of the 381 consented, non-levied landfills (14%) are constrained by a maximum annual discharge rate. Eight of the 17 regional councils do not place annual discharge rate constraints on any consented, non-levied landfill in their regions.
- Landfills exceed waste quantity limits set by consent conditions and these are not reliable indicators of typical quantities of waste being disposed at non-levied sites. Results from the report indicate the median rate of disposal to consented, non-levied landfills is significantly greater than consented maximum disposal rates.
- Ministry does not have access to information to enable it to ascertain or estimate quantities of waste going to non-levied landfills in any region in New Zealand.

Resource consents

- Consents are not a reliable source of information about the class of landfill or the quantities or composition of waste being disposed of at non-levied landfills.

Levy application

- Based on risk of environmental harm, the report concluded levying class 1 landfills that accept household waste while not applying the levy to other nine class 1 landfills that do not accept household waste, is inequitable as the harm is the same.
- Given the risk of contamination by materials that may go to class 2 landfills, extending the levy to include class 2 landfills is considered consistent with:

(a) the purpose and intent of the Waste Minimisation Act – “to protect the environment from harm”

(b) the purpose and intent of the levy “to increase the cost of waste disposal to recognise that disposal imposes costs on the environment, society and the economy”.

- A case can also be made to investigate the application of the waste levy to class 3 landfills. This is based on the purpose of the levy being “to increase the cost of waste disposal to recognise that disposal imposes costs on the environment, society and the economy” and “that use of reusable or recyclable material” represents a lower cost than use of virgin material.

Climate Change Response Act

- Levied class 1 landfills are subject to both the Waste Disposal Levy and Climate Change regulations (Emissions Trading Scheme), yet non-levied class 1 and class 2 landfills are not subject to either. This is despite the fact that the potential risk of contamination and emission factors could be higher than at a levied Class 1 landfill. The report considered this inequitable.

Future considerations

- The 2017 OECD environmental performance report recommends extending the levy to cover all relevant landfill types ([appendix J](#)).
- An options and implementation plan outlining a staged approach to expanding the levy to be developed.
- National landfill classifications for disposal facilities need to be developed to support future expansion of the levy to other facilities.

Part 2 Levy expenditure

Recommendations 3, 4, 5, 6, 7 and 8

3. Investigate options for setting rules on how territorial authorities spend levy funds.

Actions taken

- The Ministry published waste levy spending guidelines in October 2013 to guide future spending priorities for territorial authorities.
- The Ministry initially considered options to guide territorial authority spending through regulation. However, it was determined that a clearer understanding of the outcomes sought from the spending was required before measures were investigated further.
- The Ministry’s performance and engagement programme was used to monitor and reinforce the guidelines spending expectations.

Results

- Over the review period, levy spending by territorial authorities became more consistent nationally (ie, spending was more targeted towards waste minimisation activities). The compliance and engagement programme observed a lower incidence of inappropriate expenditure during the current review period.

Future consideration

- Continue to monitor territorial authority spend with a focus on connecting spending to waste minimisation outcomes sought by the Ministry.

4. Investigate options that require territorial authorities to report on levy spending and outcomes in relation to their broader responsibilities of encouraging effective and efficient waste minimisation under the Act.

Actions taken

- The Ministry collated and reviewed annual voluntary reports from territorial authorities which provided the required information to determine how and when levy money was spent.

Results

- The annual reports provided by territorial authorities lacked consistency to provide real insight, at an aggregated level, into the outcomes achieved by levy spending.
- The annual reports received identified that the levy distributed is only a small component of the overall waste minimisation spending by territorial authorities and an even smaller percentage of total waste management and minimisation budget. Therefore, any future consideration of reporting obligations should reflect this reality.

Future considerations

- Reporting obligations should reflect the proportion of territorial authorities spend in the context of wider waste management and minimisation spending.
- There is an opportunity for the Ministry to consider how it can gather data from all waste management and minimisation spending by territorial authorities. This would provide a comprehensive picture of waste management and minimisation activities and outcomes throughout New Zealand.
- The Ministry should review its information needs and data capture system to ensure information on spending requested from territorial authorities is:
 - a) informative and useful to assess the achievement of waste minimisation outcomes;
 - b) territorial authority effort required to report is proportionate to the amounts of levy funds received.

5. Operate the Waste Minimisation Fund (WMF) in a more strategic way, ensure funding is available for projects that support New Zealand's waste minimisation priorities.

Actions taken

- The Ministry have continued to develop and understand the strategic alignment between the WMF and New Zealand waste strategy.
- A priority matrix was developed to determine harm generated by waste streams. This matrix is used when assessing applications to the WMF. The matrix allows the funds assessment panel to identify projects that address high harm waste streams.
- In 2015, the WMF ran a funding round targeting the development of markets for end-of-life tyres (see case study below).
- In 2016, the criteria for the WMF were amended by the Minister for the Environment to include projects that address litter. This amendment allows for litter projects to be funded, including those that collect data to inform future policy, and provide behaviour change programmes.

- There has been a focus by the Ministry to allow the WMF to be agile when needed. This has enabled funding to be provided for emergency response to specific waste issues such as the Hurunui/Kaikōura Earthquake Recovery Waste Project.

Results

- The strategic focus has enhanced the Ministry's ability to advise on potential project applications.
- Investment decisions to utilise the fund have been successful when data is available to inform decision making.

Future considerations

- The Ministry have identified that the WMF is a key tool to invest in data projects to inform future strategic investment.
- The Ministry should continue to consider its future strategic focus to inform decision making.
- Targeted rounds for high harm waste streams should continue to be used.
- There is an opportunity to initiate active engagement with potential applicants and enhance partnership between government and applicants.

6. Undertake targeted data collection of key waste minimisation infrastructure and services in New Zealand to establish a baseline.

Actions taken

- In 2015, the Ministry commissioned MWH to undertake targeted data collection of waste minimisation infrastructure and services in New Zealand to establish a baseline against which improvements can be measured. In May 2016, MWH provided a final report to the Ministry.

Results

- Services and facilities for waste minimisation are ever evolving and multi-various in nature. The national survey completed by MWH begins to form a centralised list of some of New Zealand's facilities and services. However, the baseline dataset developed as part of this project is not an exhaustive list and there is still more data available and additional services and facilities that could be added in the future.

Future considerations

- The Ministry should continue to update information, review stocktakes and determine best method to gather data in the future.

7. Develop a framework and agreed metrics to evaluate the medium and long-term outcomes of levy funding, including wider environmental, social, economic & cultural benefits of waste minimisation funding.

Actions taken

- The Ministry has developed a Waste Disposal Levy Investment Logic framework (see [appendix I](#)). The framework focuses on levy spending. To support this, the Ministry developed a narrative to explain the logic behind the investment framework ([appendix I](#)). This is still to be rationalised within the Ministry and externally.

Future consideration

- More work is required to review the short/medium-term impacts prior to the Ministry focusing on the longer-term outcomes and impacts of its investment through levy funding. This will ensure that outcomes can be measured against the data available to the Ministry.

8. Investigate options that require WMF recipients to report on the ongoing outcomes of projects after funding ceases.

Actions taken

- A minor amendment has been made to the funding deed to enable the Ministry to approach completed projects for information. However, this is currently informal and further work is required.

Results

- Initial consideration has informed the need to align project reporting with future data requirements.

Future considerations

- The Ministry should consider whether reporting requirements align with current funding priorities.
- Continue to include strategic investment focus to inform data reporting requirements for WMF projects.
- Revisit recommendation in conjunction with the development of medium- and long-term funding data framework (recommendation 4 and 7).

Part 3 Cost of disposal

Recommendations 9 and 10

9. Undertake further work to better understand how factors such as cost and convenience are influencing disposal that would allow waste disposers to better respond to price signals.

Actions taken

- No actions were undertaken during the review period.

Future consideration

- The 2017 OECD environmental performance review of New Zealand recommends encouraging local authorities to introduce quantity- or volume-based waste charges to help minimise waste, foster recycling and improve recovery of waste service costs.

10. Consider ways to support user-pays pricing systems for waste disposal that would allow waste disposers to better respond to price signals.

Actions taken

- No direct progress has been made on this recommendation. However, the territorial authority engagement programme facilitates discussion around current and alternative price signals available. During engagement with territorial authorities the Ministry promotes the adoption of user-pays for pricing systems.

Findings

- The ability for territorial authorities to influence the waste management market has been reduced over last three years to the extent that council-run services are less feasible compared to private sector operation. This reduces the ability to price signal via territorial authorities.

Future consideration

- A shift toward private sector focus may be required.
- The 2017 OECD environmental performance review of New Zealand recommends encouraging local authorities to introduce quantity- or volume-based waste charges to help minimise waste, foster recycling and improve recovery of waste service costs.

Part 4 Achieving waste minimisation

Recommendation 11

11. Investigate options to establish the ongoing data collection required to evaluate long-term outcomes.

Actions taken

- The WMF funded the development of an initial national waste data framework project which was undertaken by WasteMINZ⁴. This sets a good foundation for future work. However, data availability and collection has remained a challenge for the Ministry over the review period. The data currently available is insufficient to meet the Ministry's evaluation needs.

Future considerations

- Further work is required to determine the Ministry's data needs including options to develop a national approach to data collection.

⁴ National Waste Data Framework Combined Protocols., Retrieved from <http://www.wasteminz.org.nz/wp-content/uploads/National-Waste-Data-Framework-Combined-Protocols-FINAL.pdf>.

Case Study 5: A targeted round for end-of-life tyres⁵

The management of end-of-life tyres has historically been an issue in New Zealand. When tyres are stockpiled, instead of being appropriately disposed, they pose a real risk to the environment, communities and human health. To date, recycling end-of-life tyres into useable products has not been successful.



In 2014, the Ministry commissioned a study from KPMG *Waste Tyres Economic Research Report 3* to understand the barriers preventing tyre recycling in New Zealand. A key finding from KPMG's report was that the current market for recycled tyre products in New Zealand is limited.

In light of these findings, the Government's Waste Minimisation Fund October 2015 round, specifically sought applications to the fund that focused on securing markets for end-of-life tyres.

As a result of the targeted funding round, the Minister for the Environment approved 10 projects for funding. These projects have the potential to successfully recover or develop markets for New Zealand's end-of-life tyres and remove the risk to the environment, communities and human health resulting from tyre stock-piles.

Summary and considerations

Progress has been made towards achieving some of the 11 recommendations. Incorporating all 11 recommendations into the work programme proved difficult, although those with clear alignment with existing priorities (ie, recommendations 1, 3 and 4) were more easily achieved. Staffing and resource constraints throughout the period resulted in recommendations being superseded by core work programmes.

The 2017 recommendations reflect a consolidation of the 2014 recommendations towards more effective and efficient administration of the levy. The preparation of an 'Implementation Plan' for waste disposal levy review recommendations should be developed concurrently with the Ministry's 2017 work programme through consultation with the Waste Advisory Board to ensure alignment and priority for future strategic areas of focus.

⁵ Photo credit: Peter Drury.

Section III

Forward focus – 2017 to 2020

The purpose of the Waste Minimisation Act is:

- – to encourage waste minimisation and a decrease in waste disposal to:
 - (a) protect the environment from harm
 - (b) provide environmental, social, economic, and cultural benefits.

Current situation

The systems and processes used to apply the levy are currently meeting statutory requirements relevant to this review. The levy is raising revenue and the revenue is being distributed to territorial authorities and the Waste Minimisation Fund to promote and achieve waste minimisation. However, this review highlights a number of key areas of concern.

1. Net waste at levied waste disposal facilities has increased by 1,583,683 tonnes (20.1%) to 9,473,509 tonnes compared to the previous review period.
2. The public is not responding appropriately to price signals generated by the levy as an incentive to reduce waste.
3. The Ministry does not have access to information about an estimated 70% of New Zealand's waste.
4. Information and data is not readily available about the success of projects funded by the levy through territorial authorities and the Waste Minimisation Fund.

The levy has now been in effect for eight years and has remained relatively unchanged during that time. The previous review highlighted systemic issues that were hindering the progress of the levy towards fulfilling its intent. The current review largely reiterates these issues and highlights that a rethink is needed to reverse some of the more negative trends currently occurring across the waste sector. This section explores these issues and provides three clear lines of strategic focus that will address these issues going forward.

Recommendations – areas for future focus

This review combines recommendations from the previous review to create three clear lines of strategic focus (listed below) that will address these issues.

- Strategy – to develop a clear vision, strategy and set of outcomes for the future direction of the levy.
- Data – to invest in developing a national waste data collection and evaluation framework.
- Approach – to develop and implement a staged approach to applying the levy across additional classes of landfills and to assess the role of a differential rating system for waste materials.

The following table shows how the 2014 recommendations are integrated into the proposed three areas of focus in the 2017 review.

Table 29: Recommendations - areas for focus 2017 and beyond

Focus 1. Strategy Develop a clear vision, strategy and set of outcomes for the future direction of the waste disposal levy, including developing an aligned approach to investing funding into projects that are targeted, measurable and provide the greatest returns.	Focus 2. Data Invest in developing a national waste data collection and evaluation framework that targets key information required to prioritise waste issues and measure effectiveness of the waste disposal levy.	Focus 3. Approach Develop and implement a staged approach to applying the waste disposal levy across additional classes of landfills and assess the role of a differential rating system.
Aligns with 2014 review recommendations 4, 5, 7	Aligns with 2014 review recommendations 4,7,8,9, 10, and 11	Aligns with 2014 review recommendations 1 and 2
Proposed timeframe: Year 1 and 2	Proposed timeframe: Years 1 to 3	Proposed timeframe: Years 1 to 5

Focus 1: Strategy - signalling intent through vision, strategy and outcomes

As highlighted in the 2014 review, the Ministry does not currently have an investment strategy and outcomes measurement framework to better advise the Crown on targeted investments to minimise waste. The 2014 review highlighted that the direction of Waste Minimisation Fund supported projects was largely ad hoc and predominantly applicant-driven rather than being directed purposefully by Ministry for the Environment. This observation is supported in the current review.

The Ministry has demonstrated that it is possible to be successful in addressing specific waste streams through its highly successful targeted funding rounds to address end-of-life tyres and e-waste. Both funding rounds led to strong stakeholder response with high quality, targeted applications being received as a result. An overarching strategy would set the future direction for territorial authorities and the Waste Minimisation Fund while signalling to the public key areas of focus to increase waste reduction in New Zealand.

Providing direction

The Ministry is currently in the explorative phase of thinking how circular economy principles could be adopted in the New Zealand context. Circular economy is an area where change and positive impact could be achieved in the future and applied to other environmental portfolios such as climate change (the waste sector contributes 5% of New Zealand’s emissions). Circular economy models are restorative and regenerative by design. They aim to keep products, components, and materials at their highest utility and economic value at all times (see [appendix K](#)).

Products can be viewed as resources capable of being recovered in the first instance, or otherwise reused or recycled. There is potential for environmental and economic gains to be made when a circular economy perspective is adopted.

Reviewing the waste disposal levy outcomes framework

The waste disposal levy outcomes framework provides another opportunity for the Ministry to clearly express its intent for future waste minimisation initiatives. At present, the framework specifies a mix of outputs and outcomes.

A framework that is realigned to focus on outcomes rather than outputs has the potential to provide a much clearer signal to key stakeholders about the underlying intent of the levy. An updated framework also presents an opportunity to rethink ways in which outcomes could drive waste minimisation more successfully, including exploring opportunities to use levy funding to leverage partnerships with business, iwi, philanthropic organisations and other government agencies who share a vision for waste minimisation.

Providing direction for waste disposal levy investment

At present, levy funds are distributed to territorial authorities and the Waste Minimisation Fund in the absence of a well-considered investment strategy to guide planning and coordination of waste minimisation initiatives. Although the Waste Minimisation Fund assessment criteria provide some guidance for project selection, the types of projects submitted to the panel during each contestable round are applicant-driven rather than being directed purposefully by a wider waste minimisation strategy.

Development of a vision and strategy for the levy and the Waste Minimisation Fund would provide a more structured and coordinated approach to identifying desired waste minimisation initiatives with a clear line of sight to long term outcomes that are measurable and produce maximum return on investment. This would also instil confidence in New Zealanders about the stability of the Ministry's resolve to create meaningful long term change.

Focus 2: Data - prioritising opportunities and measuring effectiveness

Access to relevant and reliable data and information is essential to understanding how to progress in an uncertain environment. Accurate, complete and robust information clarifies what is required, highlights opportunities for action, and provides feedback about the success of those endeavours.

Improving access to data and information

At present, the Ministry is receiving very limited data from only 11% of the country's landfills equating to about 30% of New Zealand's total waste stream. As a result, Ministry does not currently have access to information about more than two-thirds of New Zealand's waste, including where it is going, how much of it there is or what it is made up of. This lack of data means that the Ministry's efforts are impeded by an inadequate understanding of the waste landscape in New Zealand. As a result, Ministry is substantially restricted in its ability to identify, plan for and signal opportunities for industry, community and its local government partners. Ministry is also hindered in its ability to measure the success of initiatives in which it invests waste levies.

Central to the data issues is the absence of a legislative mandate to compel those with data to provide it. In addition, there is a lack of dedicated resources to manage, analyse and store waste sector data. A national and coordinated approach would ensure waste related data and information are maintained and disseminated appropriately to provide necessary evidence and information to direct policy shifts and support decision-makers with investment decisions.

A key recommendation by the OECD in its recent environmental performance review for New Zealand was that the Ministry for the Environment needed to improve its access and reporting of data and evidence regarding waste.

Accessing data on quantities and types of waste disposed at waste disposal facilities would provide the Ministry with a deeper understanding of the waste sector in this country. This would enable the Ministry to prepare timely, comprehensive and internationally comparable reports based on sound information to support planning and strategy for the country.

Evaluating the success of waste disposal levy funding

The Ministry does not currently collect sufficient data to fully evaluate the performance of levies invested in Waste Minimisation Fund or territorial authorities' projects. In particular, Waste Minimisation Fund recipients are only required to report waste diversion rates until their funding ends. But many projects (particularly those installing infrastructure) do not begin to divert significant quantities of waste until after the project is complete. As a result, the Ministry is not able to measure the true impact or effectiveness of its investment.

The Ministry's inability to access reliable and consistent data from Waste Minimisation Fund and territorial authority levy funding makes it difficult to evaluate how funding contributes to medium- and long-term outcomes. Further attention should be directed towards improving the availability of data from territorial authorities and Waste Minimisation Fund projects, including provision of waste minimisation data and contributions to wider outcomes.

Focus 3: Approach – maximising the effectiveness of the levy

International experience shows that waste minimisation levies can be highly effective tools in reducing the amount of waste going to landfill.

Aside from minor adjustments, the waste disposal levy in New Zealand, and the systems and processes that support its administration, have remained unchanged since its inception. As public attention increasingly shifts towards the harm caused by waste in the environment, a review of the operation of the levy is timely. In particular, a review should:

- assess the rate at which the levy is set and whether this rate is sending the right messages to promote and achieve waste minimisation
- analyse whether a differential rate might provide more effective, targeted incentives for minimisation of specific waste streams
- extend the levy to include a larger proportion of waste disposal facilities that are not currently subject to any incentives to reduce waste.

A review of these areas would help to ensure that the levy was set-up to best minimise waste across New Zealand. This section explores these themes further.

Addressing the cost of disposal at non-levied waste disposal facilities

A provision under Section 41(1) of the Waste Minimisation Act allows for the levy to be extended across different classes of disposal facility.

At present, the levy is applied to only 11% of New Zealand's 426 known waste disposal facilities. Eighty-nine per cent of New Zealand's facilities remain exempt from the waste levy. The 2014 review estimated the levy was being applied to just 30% of New Zealand's waste. This means producers of 70% of New Zealand's waste were not subject to any incentives to reduce waste.

The review has identified that having unmonitored non-levied waste disposal facilities has the potential to create perverse incentives that produce results such as those identified in the National Waste Disposal Survey report. The OECD's environmental performance review recommended that New Zealand should 'extend the levy to cover all relevant landfill types.'⁶ Applying the levy consistently across waste disposal facilities that receive harmful, active or recyclable materials would lead to a fairer and more transparent system.

Increasing the levy

The rate of the levy was originally set in accordance with Section 27 of the Waste Minimisation Act, which prescribes that, where no rate is set, the rate shall be \$10 per tonne. As no rate has ever been set for the levy it has remained at the \$10 default rate since it was introduced.

An arbitrarily prescribed rate negates the many opportunities to explore the complexity of variables that lead to waste minimisation behaviour. The levy rate should reflect a fine balance that manages incentives for the public, businesses and communities to adopt systems, processes and behaviours that reduce waste while preventing real and avoidable impacts to the economy. A balanced levy rate would ensure:

- waste producers were provided with sufficient incentives to reduce waste
- sufficient funds gathered through the levy were available to support development of waste minimisation infrastructure and services
- businesses delivering alternatives to disposal were able to compete with the much cheaper but more environmentally damaging option of sending waste to landfill
- employment and economic activity in the resource recovery sector were supported appropriately to replace activity in the waste disposal sector
- the value of resources was recognised appropriately and incentives for their retrieval from the waste stream operated effectively
- sufficient incentives were built into the system to encourage businesses to redesign products to eliminate waste.

The key indicator that the levy rate is well-balanced is the absence of retrievable resources in the waste stream. Given the 20.1% increase in net waste to landfill recorded during the review period, more work is required to find this balance in the rate of the levy. Gradually increasing the levy will drive the message that waste disposal is unviable and will provide the necessary signals to industry to prepare for this change well in advance.

Exploring a differential levy rating system

A provision under Section 41(1) of the Waste Minimisation Act allows for the levy to be adjusted to more effectively minimise different types of waste.

At present, the levy is applied indiscriminately across all types of waste regardless of the harm caused by each waste stream. Added to this, the system does not recognise the variable cost in time, effort and money of diverting specific waste types from the waste stream or the value of the resources that are retrieved. A differential rate that recognises these factors provides an opportunity to adjust the levy to target specific waste streams more sensibly and more effectively.

⁶ OECD. (2017). OECD Environmental Performance Reviews: New Zealand 2017. OECD Publishing: Paris. [http:// dx.doi.org/10.1787/9789264268203-en](http://dx.doi.org/10.1787/9789264268203-en)

The introduction of a differential levy rate for specific waste streams should consider:

- the harm caused by the waste stream going to landfill
- the value embedded in resources, including the cost of embedded energy and harm caused by extraction and processing of raw materials
- availability of infrastructure and services to support diversion
- the cost of funding required to develop infrastructure and support ongoing diversion
- the price point at which waste producers will be sufficiently incentivised to divert rather than dispose of a waste stream.

Targeting specific waste streams with a differentiated levy rate will clarify the often opaque landscape surrounding costs and returns for specific waste streams and enable businesses to respond with more certainty within the waste minimisation sector.

Appendix A: Performance of the levy collector and Secretary for the Environment

The following table shows levy collector's performance against regulatory functions under the Waste Minimisation (Calculation and Payment of Waste Disposal Levy) Regulations 2009 and Waste Minimisation Act 2008.

Table 30: Levy collector's performance against regulatory functions

Function	Regulatory requirement	Performance rating
Annual permission applications	Regulation 9: Provide written notice of the decision to the operator on or before 1 August of the financial year.	Excellent
Extension to return due date	Regulation 30: Written notice of the decision must be provided to the operator a minimum of five days before the return due day.	N/A
Calculate levy due (monthly return)	Regulation 18: For each month of the financial year, where: levy payable = rate of levy x net tonnage.	Excellent
Calculate levy due (annual return)	Regulation 23: For each month of the financial year: levy payable = rate of levy x (expected net tonnage)/12.	Excellent
Estimate levy due (monthly return)	Regulations 19 and 20: Estimate the amount of levy as prescribed under Regulation 20 and make written demand for payment.	N/A
Estimate levy due (annual return)	Regulations 25 and 26: Estimate the amount of levy as prescribed under Regulation 26 and make written demand for payment.	N/A
Levy invoice issued (monthly returns)	Regulation 21: Invoices are to be issued on or before the 15th day after the return due date.	Excellent
	Regulation 21: Specify the levy payable.	Excellent
	Regulation 28: The due day for payment is on or before the 20th day of the third month after the month for which the levy is payable	Excellent
Levy invoice issued (annual returns)	Regulation 24: Invoices are to be issued on or before the 15th day of the second month after the month for which the levy is payable.	Excellent
	Regulation 24: Specify the levy payable.	Excellent
	Regulation 28: The due day for payment is on or before the 20th day of the third month after the month for which the levy is payable.	Excellent
Interest invoice issued	Regulation 31: Provide invoice for interest that becomes payable on any levy that is not paid on or before the due day for payment.	Excellent
	Regulation 31: Specify the interest payable.	Excellent
Reconcile levy owed (annual returns)	Regulation 27: Ensure that the operator of an approved facility is ultimately invoiced for the correct amount of levy for the financial year.	Excellent
	Regulation 27: Issue any invoices or credit notes, or increase or reduce the amount of levy payable under any other invoice, to ensure that the correct amount of levy is paid.	Excellent [†]
	Regulation 27: May specify a due day for payment that is no earlier than 1 month after the day on which the invoice is issued.	Excellent
	Regulation 27: When issuing a credit note, reimburse any money owed to the operator.	Excellent

Function	Regulatory requirement	Performance rating
Correction of levy payable	Regulation 29: Must ensure that the operator is ultimately invoiced for the correct amount.	Excellent
	Regulation 29: May specify a due day for payment that is no earlier than 1 month after the day on which the invoice is issued.	Excellent
	Regulation 29: When issuing a credit note, reimburse any money owed to the operator.	Excellent
Extension to payment due date	Regulation 30: Provide written notice of the decision to the operator a minimum of 5 days before the payment due day.	N/A
Levy refund	Regulation 33: Arrange for the Secretary to refund any levy money to an operator that was paid on levy waived by a Regulation at the time of payment.	N/A
Recover debt	Section 36: Recover unpaid levy as debt in a court of competent jurisdiction.	N/A
Average tonnage applications	Regulation 15: Provide written notice of the decision to the operator as soon as practicable after making a decision.	Excellent

The following table shows an assessment of the Secretary for the Environment's performance against regulatory functions under the Waste Minimisation (Calculation and Payment of Waste Disposal Levy) Regulations 2009 and Waste Minimisation Act 2008.

Table 31: Secretary for the Environment's performance against regulatory functions

Function	Requirement	Performance rating
Levy refund	Regulation 33: Refund any levy money to an operator that was paid on levy waived by a Regulation at the time of payment.	N/A
Levy waiver	Section 29: Waive, in writing, the requirement for an operator to pay any amount of levy, if satisfied that exceptional circumstances justify the waiver.	Excellent
Storage time extension	Section 26 and Regulation 11: Agree in writing to an application to extend the 6-month time period limit for diverted material.	Good
Appoint enforcement officers and auditors	Section 76: Issue enforcement officers with a warrant card.	Excellent

Appendix B: Non-levied, consented disposal facilities

Table 32: Numbers of non-levied, consented landfills by landfill class

Region	Class 1	Class 2	Class 3	Class 4	Unknown	Total
Northland	0	2	1	5	2	10
Auckland	0	0	21	73	0	94
Waikato	0	1	4	0	18	23
Bay of Plenty	1	13	5	0	11	30
Taranaki	3	1	27	1	1	33
Gisborne	2	2	0	0	0	4
Hawke's Bay	0	3	1	0	9	13
Horizons	0	12	5	0	3	20
Wellington	0	4	2	1	8	15
Tasman	0	0	3	0	4	7
Nelson	0	0	6	0	8	14
Marlborough	0	0	17	0	0	17
West Coast	0	1	6	1	11	19
Canterbury	0	1	20	0	26	47
Otago	2	0	6	0	2	10
Southland	1	6	15	0	3	25
Chathams	0	0	0	0	0	0
Total	9	46	139	81	106	381

Appendix C: Levied disposal facilities

Table 33: Levied disposal facilities in New Zealand

Operator Name	Site Name	Location	Status
AB Lime Limited	AB Lime Limited	Winton	Active
Auckland Council	Claris Landfill	Great Barrier Island, Auckland	Active
Buller District Council	Karamea Refuse Tip	Karamea	Active
Buller District Council	Maruia/Springs Junction	Maruia	Active
Canterbury Waste Services Limited	Kate Valley	Amberley	Active
Central Hawkes Bay District Council	Central Hawkes Bay District Landfill	Waipukurau	Active
Chatham Islands Council	Kaingaroo Dump	Kaingaroo, Chatham Islands	Active
Clutha District Council	Mount Cooee Landfill	Stirling, Balclutha	Active
Dunedin City Council	Green Island Landfill	Green Island, Dunedin	Active
Envirowaste Services Limited	Hampton Downs Landfill	Te Kauwhata, Auckland	Active
Far North District Council	Ahipara Landfill	Ahipara	Active
Far North District Council	Russell Landfill	Russell	Active
Gisborne District Council	Waiapu Landfill	Ruatoria	Active
Grey District Council	McLean's Pit Landfill	Greymouth	Active
Hastings District Council	Omarunui Landfill	Hastings	Active
Horowhenua District Council	Levin Landfill	Levin	Active
Hutt City Council	Silverstream Landfill	Lower Hutt Wellington	Active
Innovative Waste Kaikoura Limited	Innovative Waste Kaikoura Limited	Kaikoura	Active
Marlborough District Council	Marlborough Regional Landfill (Bluegums)	Blenheim	Active
Midwest Disposals Limited	Bonny Glen	Marton	Active
Nelson City Council	York Valley Landfill	Nelson	Active
New Plymouth District Council	Colson Road Landfill	New Plymouth	Active
New Zealand Defence Force	Waiouru Landfill	Waiouru	Active
Northland Regional Landfill Limited Partnership	Northland Regional Landfill	Puwera, Whangarei	Active

Operator Name	Site Name	Location	Status
Porirua City Council	Spicer Landfill	Porirua	Active
Rotorua District Council	Rotorua District Sanitary Landfill	Rotorua	Active
Ruapehu District Council	Ruapehu District Landfill	Taumarunui	Active
Scope Resources Limited	Victoria Flats Landfill	Queenstown	Active
South Waikato District Council	Tokoroa Landfill	Tokoroa	Active
Tararua District Council	Eketahuna Landfill	Eketahuna	Active
Tararua District Council	Pongaroa Landfill	Pongaroa	Active
Tasman District Council	Eves Valley Landfill	Waimea West, Nelson	Active
Taupō District Council	Broadlands Road Landfill	Taupo	Active
Timaru District Council	Redruth Landfill	Timaru	Active
Transpacific Industries Group (NZ) Limited	Fairfield Landfill	Fairfield, Dunedin	Active
Wairoa District Council	Wairoa Landfill	Wairoa	Active
Waitaki District Council	Oamaru Landfill	Oamaru	Active
Waitaki District Council	Palmerston Landfill	Palmerston	Active
Waitomo District Council	Waitomo District Landfill	Te Kuiti	Active
Waste Disposal Services	Whitford Landfill	Whitford	Active
Waste Management New Zealand Limited	Redvale Landfill	Auckland	Active
Waste Management New Zealand Limited	Tirohia Landfill	Paeroa	Active
Wellington City Council	Southern Landfill	Happy Valley, Wellington	Active
Westland District Council	Butlers Landfill	Hokitika	Active
Westland District Council	Haast Refuse Station	Haast	Active

Appendix D: Territorial authority fund allocation

Territorial Authority	Levy allocated 2014 – 2016
Auckland Council	\$15,799,167
Christchurch City Council	\$3,807,631
Wellington City Council	\$2,116,322
Hamilton City Council	\$1,566,243
Dunedin City Council	\$1,337,444
Tauranga City Council	\$1,268,598
Lower Hutt City Council	\$1,002,114
Palmerston North City Council	\$887,736
Whangarei District Council	\$855,090
New Plymouth District Council	\$821,504
Hastings District Council	\$813,446
Rotorua District Council	\$727,321
Waikato District Council	\$705,977
Napier City Council	\$ 635,697
Far North District Council	\$620,610
Porirua City Council	\$573,118
Waimakariri District Council	\$550,518
Tasman District Council	\$522,857
Waipa District Council	\$516,064
Nelson City Council	\$514,016
Timaru District Council	\$488,189
Selwyn District Council	\$487,281
Gisborne District Council	\$486,693
Western Bay of Plenty DC	\$485,082
Marlborough District Council	\$482,642
Invercargill City Council	\$480,104
Whanganui District Council	\$469,688
Kāpiti Coast District Council	\$460,528
Upper Hutt City Council	\$445,846
Taupō District Council	\$365,959
Whakatāne District Council	\$364,480
Matamata-Piako District Council	\$350,219
Ashburton District Council	\$342,501

Territorial Authority	Levy allocated 2014 – 2016
Horowhenua District Council	\$334,882
Southland District Council	\$328,708
Queenstown Lakes DC	\$309,789
Manawatū District Council	\$306,386
South Taranaki District Council	\$295,817
Thames-Coromandel DC	\$291,254
Kaipara District Council	\$269,466
Masterton District Council	\$259,375
Kawerau District Council	\$251,282
South Waikato District Council	\$246,209
Waitaki District Council	\$231,358
Hauraki District Council	\$199,007
Central Otago District Council	\$198,182
Taranua District Council	\$188,302
Clutha District Council	\$188,002
Rangitikei District Council	\$156,666
Grey District Council	\$148,742
Central Hawkes Bay DC	\$141,816
Gore District Council	\$134,033
Ruapehu District Council	\$133,321
Hurunui District Council	\$127,470
Buller District Council	\$115,951
South Wairarapa DC	\$105,544
Otorohanga District Council	\$101,716
Stratford District Council	\$99,987
Waitomo District Council	\$99,617
Opōtiki District Council	\$94,375
Westland District Council	\$92,536
Carterton District Council	\$90,725
Wairoa District Council	\$88,345
Waimate District Council	\$83,624
Kaikōura District Council	\$69,817
Mackenzie District Council	\$45,995
Chatham Islands Council	\$6,690
	*\$47,185,673

*This figure differs from the figure reported in the report due to accruals over the review period.

Appendix E: Waste Minimisation Fund criteria

The following criteria are used to assess projects seeking funding from the Waste Minimisation Fund.

Project benefits

- Preference will be given to projects that collectively give the largest net benefit over time. Assessment of the effectiveness of projects will include the extent to which the projects can demonstrate:
 - likelihood of success
 - reduction of harm to the environment
 - reduction in the volume of waste disposed
 - economic, environmental, social or cultural benefits
 - longer-term benefits after the completion of the project.
- Projects will be assessed for their strategic value in achieving the purpose of the Waste Minimisation Fund. Strategic value means the likely ability of projects to act as catalysts that enhance and extend the uptake of waste minimisation.
- The degree of partnership and cross-sectoral collaboration will be taken into account in assessing the strategic value of proposals.
- The level of funding from other sources will be taken into account. Shared funding is preferred.

Project delivery

- The applicant must demonstrate:
 - ability to deliver the project
 - how the project will achieve its goals
 - how the effectiveness of the project will be monitored, evaluated and reported
 - if and how the project will be used to promote waste minimisation to the wider public
 - if and how the project will continue after funding ends and become self-sustaining, particularly if the funding is for the establishment phase of a longer-term project.

Appendix F: Funded Waste Minimisation Fund projects

Announced Waste Minimisation Fund projects from July 2013 – June 2016

Recipient	Project Title	WMF Approved
Coromandel Independent Living Trust	Coromandel Community Reuse Centre (CCRC)	\$90,000
42collective Incorporated t/a Conscious Consumers	Conscious Consumers: Hospitality Sector	\$135,267
BioRich Limited	Recycling & Recovery of Organic Waste	\$468,720
Waste Management Institute New Zealand Incorporated	National Waste Data Framework	\$97,500
CID Resource Recovery Limited	Resource Recovery Plant	\$1,245,000
Pioneer Generation Ltd trading as Energy for Industry	Refinery Waste to Energy	\$58,000
Para Kore Marae Incorporated	Para Kore ki Te Moana a Toi te Huatahi	\$139,840
Matakana Island Marine Club Inc	Matakana Island Recycle Transfer Centre	\$70,000
Compounding Specialists Ltd	Processing Janitorial Packaging Onshore	\$438,000
Earthlink Incorporated	Smart Clothing	\$180,000
DuluxGroup (New Zealand) PTY Ltd	Waste Wash Water Recycling Project	\$50,000
Sims Recycling Solutions (Sims)	TV Takeback: Recycling of legacy TVs	\$4,845,403
SLR Consulting NZ Ltd	E-waste product Stewardship	\$170,000
Marlborough District Council	Commercial Industrial Sorting Facility (CIF)	\$776,314
Winstone Wallboards Ltd	Designing Out Construction Waste Feasibility Study	\$105,000
Environment Canterbury	New Zealand Rural Waste Minimisation Project	\$550,600
Refrigerant Recovery	Upgrading used refrigerant collection process to safely Collect and Destroy Flammable Synthetic Refrigerants	\$55,000
Hastings District Council	Waste Futures	\$250,000
Para Kore Marae Incorporated	Para Kore ki Te Hiku o te Ika (Far North)	\$132,000
Good Neighbour	Good Neighbour Food Rescue	\$60,000
Eco-Stock Supplies Ltd	EcoStock Anaerobic Digester: A Model Site	\$100,000
3R Group Limited	Identification, Collection and Disposal of Persistent Organic Pollutants and Unknown Agrichemicals	\$279,929
Masterton District Council	Special Waste Recycling and Disposal Facility	\$80,000
Hadlee & Brunton Recycling Limited	Foamed Glass - Market Assessment	\$74,463
Halon Recycling NZ Ltd	Halon Extinguisher bring-back	\$190,000
KPMG - Tyres	Waste Tyre Economics Research	\$100,000
WasteMINZ	Love Food Hate Waste	\$460,000
Para Kore Marae Incorporated	Para Kore ki Ruapehu	\$132,000

Recipient	Project Title	WMF Approved
Waikato District Council	Whaingaroa Organic Waste Diversion to Compost Phase 2	\$149,463
Astron Plastics Group Ltd	Cleaning and Recycling of 'Hard to Recycle' Soft Plastics	\$510,653
The Packaging Forum Incorporated	Recycling of Post-consumer Soft Plastic Packaging	\$700,930
The New Zealand Forest Research Institute (Scion)	Extrusion devulcanisation of waste tyres for to replace imported polymers	\$182,550
The New Zealand Forest Research Institute (Scion)	MDF Panel Boards Utilising Crumb Rubber Sourced from End of Life Tyres	\$100,000
The New Zealand Forest Research Institute (Scion)	Acoustic Building Products from End of Life Tyre Sourced Crumb Rubber	\$178,000
Fulton Hogan Ltd	Tyre Rubber Modification of Bitumen Binders	\$40,000
Total		\$13,194,632

Unannounced Waste Minimisation Fund projects from July 2013 – June 2016

Recipient	Project Title	WMF Approved
Unannounced Projects	Unannounced Projects	\$27,318,315

Appendix G: Priority waste streams

Waste Minimisation Fund priority waste streams have been developed to support the ‘reduction of harm to the environment’ goal in the New Zealand Waste Minimisation Strategy. Priorities also reflect the Government’s focus on reducing harm.

The scoring tool used by the Waste Minimisation Fund assessment panel considers the priority of a waste stream when assessing projects for funding. The scoring tool scores projects that address high-priority waste streams more highly.

Please note that the WMF is still open to fund innovative or high quality, non- or low-priority projects.

Priority	Waste stream
Very high	<ul style="list-style-type: none"> • PCBs • Timber (treated and non-treated) • Primary sector related hazardous waste (eg, <i>tannery, wool scouring, factory wastes</i>) • Manufacturing and services sector hazardous waste (eg, <i>aluminium processing waste</i>) • Agrichemicals • Medical waste • Asbestos • Contaminated soil
High	<ul style="list-style-type: none"> • Oil • Refrigerants • Biosolids • Primary sector related organic waste (eg, <i>agricultural or forestry wastes</i>) • Household organic (food waste and green waste) • Paint • End-of-life tyres • E-waste • Nappies and sanitary • Commercial green waste
Medium	<ul style="list-style-type: none"> • Packaging – household and commercial • Demolition materials – inert • Paper and cardboard (household and commercial) • Plasterboard • Construction materials (eg, <i>PVC, insulation, metal works, glass</i>)
Low	<ul style="list-style-type: none"> • Cleanfill • Furniture • Textiles
Other (assessed on a case-by-case basis)	<ul style="list-style-type: none"> • Other potentially hazardous; • Other organic • Other – not specified elsewhere

Appendix H: National waste disposal survey final report

Key findings

Introduction

The 2014 review of the waste disposal levy recommended that the Ministry investigate making additional waste disposal sites subject to the levy. To quantify the costs and benefits of extending the levy, the Ministry commissioned the National Waste Disposal Survey (NWDS) to help gather data on the number of non-levied, consented landfills currently operating, as well as the volume and composition of the waste disposed at these sites. Key findings are thus focussed on the number of non-levied landfills, quantity of waste disposed, and composition of waste disposed.

Landfill numbers

The number of non-levied consented landfills determined as a result of the NWDS was 381 with:

- 336 landfills being confirmed as open
- 45 landfills being of unconfirmed status.

This compares with the previous findings (Tonkin & Taylor 2014) of:

- 264 landfills being confirmed as open
- 324 landfills being of unconfirmed status.

Thus, the number of landfills of known status has increased (27%) and of unknown status decreased (86%). Whilst there is insufficient information to determine whether the overall number of landfills has increased or decreased, the landfill database more reliably records the number of operating non-levied, consented landfills has increased.

Waste quantity

The quantity of waste being discharged to non-levied, consented landfills is regulated by a resource consent condition setting a maximum annual discharge rate for only 14% of the landfills.

The available information indicated that eight regions do not issue consents with such a condition.

The median consent limit of waste quantity for the 54 landfills reported as having such limits was 7,000 tonnes/year approximately for class 1 and class 2 landfills and 11,000 tonnes/year approximately for class 3 and class 4 landfills (using landfills densities of respectively 0.9 tonnes/m³ and 1.4tonnes/m³).

The median quantity of waste for the 13 landfills surveyed was 42,000 tonnes/year, and most of these landfills were class 1 and class 2 landfills. Thus, the waste quantity limits set by consent conditions are not a reliable indicator of typical quantities of waste being disposed at the landfills. There is insufficient information in the landfill database to estimate the quantities of waste going to non-levied consented landfills.

The quantities reported by Tonkin & Taylor (T&T 2014) are expected still to be indicative of waste going to non-levied, consented landfills because the method used was based on correlating waste quantities with economic activity.

Waste composition

Knowing the composition of waste disposed to a landfill assists in understanding:

- the risk to the environment of the waste being disposed
- the potential benefits of minimising the waste because either the risk to the environment is minimised directly by avoiding the waste or, instead of becoming waste, the material is reused, recycled or recovered and thus avoids or reduces adverse environmental effects associated, for example, with greenhouse gas emissions associated with the use of virgin materials.

This knowledge would help to achieve the purpose of the levy if the levy were applied on the basis of waste composition rather than on the basis of waste source (ie, that a landfill accepts household waste).

The composition of waste being discharged to non-levied, consented landfills can be assessed to some degree from conditions in resource consents. Such an assessment provides guidance in terms of risk of contamination as presented in the Guidelines. However, there is variability amongst regulatory authorities in defining types of landfills and setting conditions on composition of waste permitted for disposal at each type of landfill. This variability means that consent conditions provide only a loose guide to the risk of contamination and little or no guidance on the potential for utilising the material disposed for reuse, recycling or recovery.

The limitations of assigning a class to a landfill based on permitted waste in resource consent conditions and the Guidelines became apparent during the landfill surveys. Four out of the 13 landfills surveyed (31%) changed class from a lower risk category to a higher risk category.

Further findings

The guidelines

The Technical Guidelines for Disposal to Land, WasteMINZ 2016 (The Guidelines) classify landfills into four types of landfills based on the composition of waste material and its risk of contamination. A class 1 landfill takes materials with the highest risk of contamination and a class 4 landfills takes material with the lowest risk of contamination. Class 2 and Class 3 landfills take materials of intermediate risk.

The landfill classification system in the Guidelines is aligned with the purpose of the Act in that it is based on protecting the environment from harm. Applying the levy in the context of this landfill classification system would be aligned to a purpose of the levy in that the cost of waste disposal could be increased in proportion to the risk of harm.

Resource consents

The information available from resource consents helps in classifying a landfill in terms of landfill class in the Guidelines. However, given the results of the site surveys, classifying landfills by resource consent information alone is likely to underestimate the numbers of class 1 and class 3 landfills.

Few consents have a condition setting a limit on the annual rate of waste discharge to land. The available information is insufficient to estimate quantities of waste being discharged to non-levied, consented landfills regionally or nationally.

Definitions

The Waste Minimisation Act 2008 states that “household waste means waste from a household that is not entirely from construction, renovation, or demolition of the house”. Under the Act, a “disposal facility” is one that accepts household waste. Household waste is defined in terms of its source being a household rather than its composition and a disposal facility is determined on the basis of taking household waste and not necessarily the risk of contamination from the waste being disposed. The risk of contamination from material disposed at a class 1 landfill is not necessarily determined by whether or not household waste is accepted.

A review of the definition of disposal facility given in the Waste Minimisation Act 2008 is considered appropriate given the definition of a class 1 landfill and the number of class 1 landfills that do not fit the definition of a disposal facility. The Guidelines use the term biodegradable materials as a type of material that differentiates landfill classes ie, a class 2 landfill has a threshold on such material stated as maximum incidental or attached biodegradable materials (eg, vegetation) to be no more than 5% by volume per load and class 3 landfill has a threshold of 2% by volume per load. A class 2 landfill can accept treated and untreated timber and other biodegradable material. Household or putrescible construction and demolition are excluded. Thus, the use of the term biodegradable in the Guideline is ambiguous.

In any review of the meaning a disposal facility and the application of the levy, and the use of the term biodegradable materials or similar to differentiate landfill types, a robust definition is needed and one that distinguishes a type of biodegradable material suitable for a class 1 landfill and a type acceptable in a class 2 landfill, or equivalent landfills.

Disposal fees

The NWDS results indicated that disposal fees can be:

- an internal cost for a private landfill disposing of industry specific waste
- charges negotiated with account holders disposing waste at private landfills
- scheduled gate fees.

One surveyed site had no disposal fees.

Given the variability of fee structures and the confidentiality of fees in many instances, the benefit of including fees in the landfill database should be reviewed in terms of the cost and effectiveness of pursuing this information.

Levy application

The Guidelines classify landfills in terms of their risk of contamination. A class 1 landfill receives waste that poses the highest risk. A levied landfill (ie, a disposal facility as defined in the Waste Minimisation Act 2008 is a class 1 landfill. A class 1 landfill, whether levied or non-levied poses a similar risk. The differentiating feature is that a levied landfill accepts household waste. This feature in itself is not a measure that distinguishes levied class 1 landfills as posing greater a risk of contamination than non-levied class 1 landfills. The Ministry (2014) reported 48 levied landfills and the NWDS identified 9 non-levied, class 1 landfills.

Therefore, it is concluded that levying some class 1 landfills and not others is inequitable. A class 2 landfill, in terms of the *Technical Guidelines for Disposal to Land* (WasteMINZ 2016), takes material that can contain biodegradable and leachable components and requires an engineered liner and leachate collection system. Given the risk of contamination by material that may go to a class 2 landfill, extending the levy to include class 2 landfills is considered consistent with the purpose of the Act, which includes “protect the environment from harm, and consistent with the purpose of the levy, which includes increase the cost of waste disposal to recognise that disposal imposes costs on the environment, society and the economy.”

The provisions of the Guidelines do not include a landfill liner for class 3 and class 4 landfills, which reflects the lower risk of contamination posed by material disposed at these landfills, as defined by the Guidelines.

Class 3 landfills do accept material that could be reused or recycled. The purpose of the Act includes encouraging waste minimisation. Also, given that a purpose of the levy includes “increase the cost of waste disposal to recognise that disposal imposes costs on the environment, society and the economy”, and that use of reusable or recyclable material can be a lower cost than use of virgin material, it is considered there is a case to investigate application of the levy to class 3 landfills.

Climate Change Response Act

The Climate Change Response Act 2002 and regulations place requirements on operators of disposal facilities (as defined in the Waste Minimisation Act) to:

- collect and report this information from 1 January 2012
- surrender New Zealand Units (NZUs) to match their emissions.

The Climate Change (Waste) Regulations 2010 and Climate Change (Unique Emissions Factors) Amendment Regulations 2010 prescribe methods of determining the quantity of emission units for the purpose of determining the number of NZUs to surrender. The Amendment Regulations prescribe classes of waste and a unique emission factor for each class. These are presented in the table below:

Waste Class	Unique Emissions Factors
garden waste	1.26
nappy and sanitary waste	1.512
all putrescible waste other than garden waste	0.945
paper waste	2.52
sewage sludge	0.315
timber waste	2.709
textile waste	1.512

The regulations apply only to disposal facilities (ie, levied class 1 landfills). Waste types for class 2 landfills include paper waste, timber waste and textile waste. The emission factors for these types of waste are respectively 2.52, 2.709 and 1.512, which are the three highest factors. This indicates that class 2 landfills could be high generators of emission as defined in the regulations.

Another matter of equitability is that of levied class 1 landfills being subject to both the levy and Climate Change Regulations yet non-levied class 1 landfills and class 2 landfills not being subject to either, even though potentially their risk of contamination and the emission factors could be higher than a levied class1 landfill.

Appendix I: Waste disposal levy investment logic

What is the framework for the waste disposal levy?

The Waste Minimisation Act 2008 (WMA) was introduced to encourage a reduction in the amount of waste we generate and dispose in New Zealand. The aim of the WMA is to reduce the environmental harm of waste and provide economic, social and cultural benefits for New Zealand.

The waste disposal levy was established by the WMA. The levy is at \$10 per tonne (excluding GST) on all waste sent to landfill as defined by the WMA. The levy encourages New Zealanders to start taking responsibility for the waste they produce and to find more effective and efficient ways to reduce, reuse, recycle or reprocess waste. At the same time, it also creates funding opportunities for waste minimisation initiatives.

Where do we spend the waste disposal levy?

Half of the levy money goes to territorial authorities (TAs) (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 put into the Waste Minimisation Fund. The fund is for waste minimisation activities in New Zealand.

Why did we develop an investment logic for the waste disposal levy?

The 2014 review of the effectiveness of the waste disposal levy⁷ noted that the data collected from the levy funding has been predominantly focused on monitoring and compliance needs. We were good at tracking individual projects but not the aggregated outcomes of the levy spend. To better measure and evaluate the costs and benefits of levy funding, further work should be undertaken to develop an appropriate framework and measures for evaluating medium and long-term funding outcomes.

The review recommended: “Develop a framework and agreed metrics to evaluate the medium and long-term outcomes of levy funding, including considering the wider environmental, social, economic and cultural benefits of waste minimisation”.

What is the scope of the waste disposal levy investment logic?

The waste disposal levy investment framework focuses on the way the levy money is spent. The WMA prescribes that the money collected from the levy must be provided to territorial authorities, spent through the Waste Minimisation Fund (WMF), or used to recover administration costs.

What are the assumptions behind this logic?

In developing the framework we have assumed the following.

- Individuals and businesses will continue to dispose waste to disposal facilities and therefore the levy will continue to be collected and available for spending.

⁷ [Review of the effectiveness of the waste disposal levy 2014](#)

- Waste is an environmental harm and by reducing the amount of waste produced we reduce the associated environmental harm.
- A combination of information and incentives are required for behaviour change, and these need to be supported by appropriate waste minimisation infrastructure and accessible services to achieve waste minimisation.
- We have not reached optimal waste disposal, ie, there are further opportunities to reduce waste.
- The role of Government is to create the conditions to achieve waste minimisation rather than being directly involved in waste minimisation.
- Priority setting by the Ministry for the Environment influences the spending from the levy.

How does the waste disposal levy investment logic work?

The model needs to be read from bottom up, starting with the inputs, including the financial funding, into the waste minimisation investment system.

Inputs

The inputs include approximately \$30 million collected annually from the levy, coupled with administrative support and criteria used to guide WMF funding decisions and provide guidance to TAs. These latter inputs are flexible and can be adapted strategically to target investment. Assumed here is the legislative context and the framework that guides the levy spend – who receives what (these are made explicit in the second level of the logic model - “systems and processes”).

Systems and processes

This is where the movements, transfers, and investments of the levy materialise. Investment decisions and allocations of funding are made at this level. Both Waste Minimisation Fund project applicants and TAs need to meet strict criteria to receive funding to invest in infrastructure or services, as outlined.

Outputs

The outputs represent the tangible outcomes that have transpired as a result of the investment by Waste Minimisation Fund recipients and the TAs. Outputs listed are presented at a high level, to keep the model succinct and uncluttered. This masks the diverse range of services and types of infrastructure and feasibility studies invested in.

Short-term outcomes

At this level some of the initial, early benefits of the investment can be seen beyond improvements in availability and quality of infrastructure and services. Benefits include growing awareness of their importance and motivation to use them by people, organisations, and start-up ventures by becoming self-sustaining. These provide an important catalyst to achieve longer term outcomes.

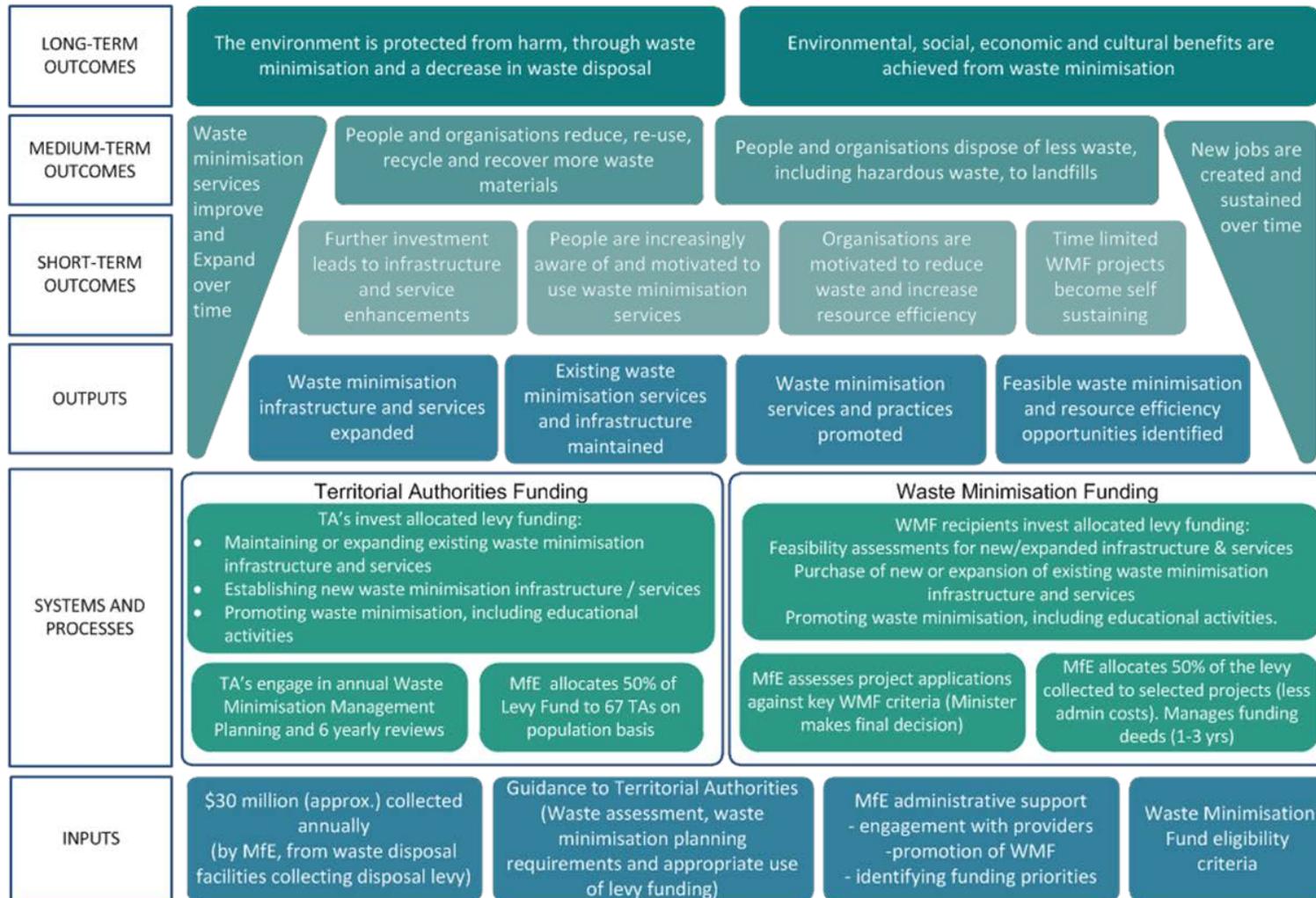
Medium-term outcomes

At this level the system is well established, and is coupled with visible changes in waste generating and disposal behaviour, resulting in reduction in the volume of waste being disposed at landfills. The outcomes that we are striving for, including economic benefits such as increasing employment, start to become embedded in society.

Long-term outcomes

At this level the system is operating as intended, and the high-level outcomes that we seek are achieved.

Waste Disposal Levy Investment Logic

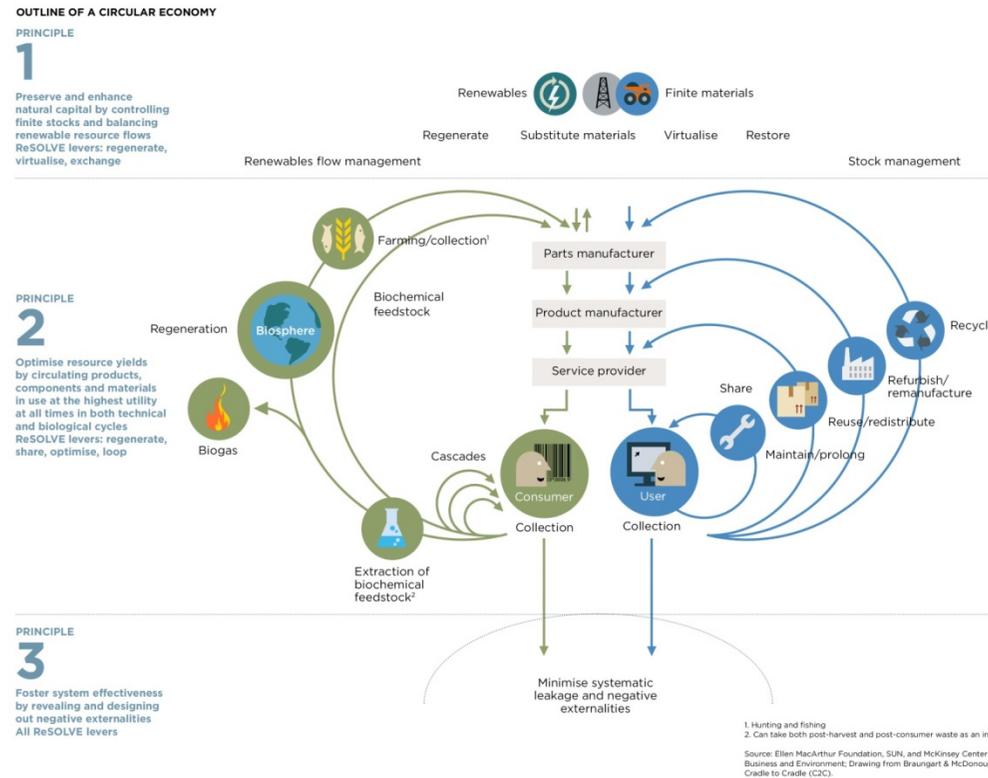


Appendix J: Recommendations 2017 OECD environmental performance review of NZ

1. The OECD noted that New Zealanders enjoy a high environmental quality of life and access to pristine wilderness. However, New Zealand's growth model, based largely on exploiting natural resources, is starting to show its environmental limits.
2. The report made the following recommendations in relation to waste.
 - Extend the levy to cover all relevant landfill types; encourage local authorities to introduce quantity- or volume-based waste charges to help minimise waste, foster recycling and improve recovery of waste service costs.
 - Improve the collection of data on the generation, disposal and treatment of waste, with a view to producing timely, comprehensive and internationally comparable information.
 - Prepare new and review existing NPSs and NESs to reinforce the national-level regulatory and methodological framework for managing air and water pollution; establish national standards for hazardous waste management.
 - Establish nationally standardised requirements for air and water discharge permits and waste generation and management; encourage better cross-media integration of discharge permits on the basis of best available techniques; extend consent and permit requirements to existing use rights obtained under older regulatory regimes.

Appendix K: Circular economy system diagram

A circular economy seeks to rebuild capital, whether this is financial, manufactured, human, social or natural. This ensures enhanced flows of goods and services. The system diagram illustrates the continuous flow of technical and biological materials through the 'value circle'.



Source: <https://www.ellenmacarthurfoundation.org/circular-economy/interactive-diagram>

Glossary

This glossary provides the relevant legal definitions for key terms used in this report, as set out in sections 5, 6 and 7 of the Waste Minimisation Act 2008, and regulation 11 of the Waste Minimisation (Calculation and Payment of Waste Disposal Levy) Regulations 2009.

- Disposal**
- (1) 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.
 - (2) In subsection (1)(a), for all purposes relating to the levy, final (or more than short-term) deposit of waste means any deposit of waste other than a deposit referred to in section 26(3).
 - (3) In subsection (1) (b), incineration means the deliberate burning of waste to destroy it, but not to recover energy from it.

- Disposal facility**
- (1) disposal facility means—
 - (a) a facility, including a landfill,—
 - (i) at which waste is disposed of; and
 - (ii) at which the waste disposed of includes household waste; and
 - (iii) that operates, at least in part, as a business to dispose of waste; and
 - (b) any other facility or class of facility at which waste is disposed of that is prescribed as a disposal facility.
 - (2) In subsection (1) (a) (ii), household waste means waste from a household that is not entirely from construction, renovation, or demolition of the house.

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.

Diverted tonnage the tonnage of waste or diverted material that is reused or recycled at the disposal facility, or is removed from the facility, not later than 6 months after entering the facility (or any later time that the Secretary for the Environment has agreed to in writing).

- Recovery**
- (a) means extraction of materials or energy from waste or diverted material for further use or processing; and
 - (b) includes making waste or diverted material into compost.

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

Reduction	means— (a) lessening waste generation, including by using products more efficiently or by redesigning products; and (b) in relation to a product, lessening waste generation in relation to the product.
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.
Waste	(a) means anything disposed of or discarded; and (b) 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 (c) to avoid doubt, includes any component or element of diverted material, if the component or element is disposed of or discarded.
Waste management and minimisation	means waste minimisation and treatment and disposal of waste.
Waste management and minimisation plan	means a waste management and minimisation plan adopted by a territorial authority under section 43 of the Waste Minimisation Act.
Waste minimisation	means— (a) the reduction of waste; and (b) the reuse, recycling, and recovery of waste and diverted material.

Terms used in this report, which are not legal definitions:

Cleanfill	any landfill that accepts only material that when discharged into the environment will not pose a risk to people or the environment.
Landfill	a waste disposal site used for the controlled deposit of solid wastes onto or into land.
Price elasticity of demand	a measure used in economics to show the responsiveness, or elasticity, of the quantity demanded of a good or service to a change in its price.
Price signal	information conveyed, to consumers and producers, through the price charged for a product or service, thus providing a signal to increase supply and/or decrease demand for the priced item.
Waste generation	the amount of waste produced or created. Waste generation = waste disposal + waste reused, recovered and recycled.

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