

Interim regulatory impact statement: Improving household and business recycling



Ministry for the
Environment
Manatū Mō Te Taiao



Te Kāwanatanga o Aotearoa
New Zealand Government

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Regulatory Impact Statement: Improving household and business recycling

Coversheet

Purpose of Document	
Decision sought:	<i>Analysis produced for the purpose of informing the release of a consultation document</i>
Advising agencies:	<i>Ministry for the Environment</i>
Proposing Ministers:	<i>Minister for the Environment</i>
Date finalised:	<i>8 February 2022</i>
Problem Definition	
<p>New Zealand’s kerbside recycling and food scraps collections are underperforming resulting in environmental harm, greenhouse gas emissions, and economic losses.</p> <p>The New Zealand public is highly concerned about New Zealand’s poor recycling performance. Moreover, local government and the recycling sector have both, after several years of their own attempts to improve kerbside recycling, asked the Government to consider taking national action.</p> <p>This impact statement analyses seven proposals to improve the performance of recycling collections to reduce the harms above. Six proposals relate to household kerbside recycling and one to increasing the recycling of business food waste. The proposals aim to increase the quality and quantity of materials collected, while improving household engagement and trust in the kerbside recycling and food scraps collection systems.</p>	
Executive Summary	
<p>The Government is committed to a low-emissions and climate-resilient future for New Zealand, and to a productive, sustainable, and inclusive economy that lifts the wellbeing of us all. The Government is aiming for ambitious reductions in waste and climate emissions with targets proposed in the:</p> <p><i>Emissions reduction plan (ERP) – target by 2035</i>¹</p> <ul style="list-style-type: none">• reduce biogenic methane from waste by 40 per cent <p><i>Waste Strategy – targets by 2030</i></p> <ul style="list-style-type: none">• reduce waste to landfill from households by 60-70 per cent• reduce waste to landfill from businesses by 30-50 per cent• reduce biogenic waste methane emissions by at least 30%. <p>Feedback from public consultation on both the ERP the Waste Strategy in late 2021 showed strong support for ambitious targets and immediate action. This support adds weight to the request from the recycling sector and local government for national action on kerbside recycling. Improving our resource recovery systems and creating a more circular economy is a step towards achieving these ambitions and will help us reduce both our resource use and climate emissions.</p>	

¹ More details are available in the proposed [emissions reduction plan](#) and [waste strategy](#).

Why kerbside dry recycling and food scraps collections?

The Government has initiated a broad and transformational waste programme².

Household kerbside dry recycling and food scraps collections are a foundational system in our circular economy³. They are the main way that households can divert waste from landfill and return resources to the economy.

At present only a third of household materials placed at kerbside are collected for recycling, with the rest placed in the rubbish. In line with the Waste Strategy targets, the proposals aim to increase the amount of material recycled at kerbside to 50-70 per cent.

The proposals to divert household and business food scraps from landfill are expected to reduce annual emissions by around 50 kt CO₂e in 2030, representing approximately 9 per cent of the required 2030 emissions reductions under the Climate Change Commission's demonstration pathway for waste⁴.

Why now? What are the drivers for acting now?

Improving kerbside recycling and diverting food waste from landfill are essential first steps that are widely supported⁵. The resource recovery sector and local government have called for improvements to kerbside collections⁶. This Government took heed and committed to improving kerbside systems in the Labour Party 2020 election manifesto⁷.

New Zealand's kerbside recycling collections are underperforming

They are not diverting as much as they could from landfill and have high levels of contaminated materials in them which cause problems for recycling and add costs to our recycling system. Services also vary considerably around the country.

An underperforming kerbside recycling system contributes to:

- a high per capita disposal of household waste to landfill
- an unsustainable level of environmental harm due to New Zealand's high, and growing, resource use
- avoidable climate emissions from landfilled organic materials
- avoidable costs and a loss of value and opportunity for our economy.

The public's commitment to using recycling collections is strongly linked to whether they believe it is worthwhile. The variation in collections around New Zealand causes confusion and undermines the public's confidence in using our recycling system and its outcomes.

² [Waste reduction work programme | Ministry for the Environment](#), for the waste hierarchy see pg 10

³ 'Dry recycling' refers to the collection of common recyclable packaging materials such as glass, steel, aluminium, some plastics, paper and cardboard. 'Food scraps' collections can also be known as 'wet recycling' or 'organics collections'. Organic waste may include paper and cardboard, but more usually includes garden waste. The resource recovery sector often abbreviates food organics and garden organics to 'FOGO collections'. Unless otherwise specified the proposals in this document relate to food scraps collections. This term has been used for greater clarity.

⁴ The demonstration pathway is outlined in the proposed [emissions reduction plan](#), pg 108 the appendix.

⁵ In the recent emissions reduction plan consultation 94 per cent of submitters supported a more standardised approach to [kerbside] collection systems for households and businesses. While 86 per cent of submitters were in support of banning the disposal of food, green and paper waste at landfills for all households and businesses by 1 January 2030, if there were alternative ways to recycle this waste instead

⁶ [National Resource Recovery Taskforce](#) and [Local Government Waste Manifesto](#)

⁷ [Labour's 2020 Election Manifesto - NZ Labour Party](#)

A high performing kerbside recycling system is necessary:

- to reduce our climate emissions and contribute to proposed emissions targets
- to reduce our waste to landfill and contribute to proposed waste strategy targets
- as a foundational system for our circular economy.

Objectives

To reduce our environmental impacts associated with high resource use, reduce our climate emissions, and to establish a foundational system for a circular economy.

The proposals to improve recycling intend to do this by:

- reducing contamination and increasing the quality of materials collected for dry recycling and food scrap recycling
- increasing the quantity of the targeted materials placed in kerbside recycling and food scraps collections rather than in the rubbish
- increasing public engagement and trust in kerbside collections.

Proposals to increase effectiveness and lower contamination

This impact statement analyses six proposals with options to improve household kerbside collection performance (quality, quantity, access, and trust) and one proposal to increase the recycling of business food waste.

Table 1 List of proposals to improve recycling

2A	Collect a standard set of materials in dry recycling and foods scraps collections nationally	<i>Proposal: A standard list that sets out the only materials that can be collected in:</i> a. dry recycling collections b. food scraps collections
2B	Increase household food scraps diversion from landfill	<i>Proposal: All councils provide a kerbside food scraps collection to urban households*</i>
2C	Start reporting on kerbside waste data	<i>Proposal: Require reporting for both council and private kerbside collections</i>
2D	Encourage best practice in kerbside collections	<i>Proposal: Set councils a minimum baseline performance and a high achieving target for kerbside diversion</i>
2E	Reduce glass contamination of recyclable materials	<i>Options for discussion: Seeking views on separation of glass or cardboard and paper. Preference, if any, not yet determined.</i>
2F	Increase household access to kerbside dry recycling collections	<i>Proposal: All councils provide a kerbside dry recycling collection to urban households*</i>
2G	Increase business food scraps diversion from landfill	<i>Proposal: Require all businesses to separate food scraps from general rubbish</i>

*urban households are regarded as those in town/cities with a population greater 1,000.

Together these proposals aim to shape kerbside recycling into an efficient and effective system to underpin our circular economy and reduce the environmental and climate impact of household resource use.

Limitations and Constraints on Analysis

The Ministry has not completed a full cost benefit analysis (CBA) for this interim regulatory impact statement, although it has conducted an indicative CBA, in this document. The Ministry seeks to gain more evidence through a public consultation process to inform final costs and benefits of any regulatory decisions, and this may affect officials' final recommendations. A more comprehensive CBA is being developed for the final regulatory impact statement that will sit alongside any options that are chosen to be implemented.

Assumptions have been made on the degree to which the proposals will affect quality and quantity of materials collected. These estimates are based on New Zealand examples and international best practice.

National kerbside waste estimates are based on the best available data, but the data is incomplete and inconsistent. The waste reporting proposal is intended to improve data for future analysis.

Responsible Manager

Shaun Lewis

Director – Waste and Resource Efficiency

Ministry for the Environment



8 February 2022

Quality Assurance

Reviewing Agency:	The Ministry for the Environment's Regulatory Impact Analysis Panel (RIAP)
Panel Assessment & Comment:	<p>RIAP reviewed the interim Regulatory Impact Statement (RIS) "Regulatory Impact Statement: Improving household and business recycling" produced by the Ministry for the Environment and dated 8 February 2022. The panel considers that it partially meets the Quality Assurance Criteria.</p> <p>The RIS demonstrates a thorough understanding of the problem and clearly sets out a range of options, which are well supported with analysis and data where available.</p> <p>However, the impact statement is constrained by the fact that this policy proposal is at the consultation stage with consultation anticipated to take place in early 2022. The impact statement requires testing with affected parties through this consultation process. In particular, the costs and benefits require further exploration. We note that an independent cost benefit analysis</p>

and feedback from consultation will be used to update the impact statement in a final RIS prior to final policy decisions.

Regardless, the panel considers that the information provided in the interim RIS is detailed and reflects a good attempt to provide information on the possible issues, impacts and benefits of the proposals and options discussed, which will be strengthened through the information gained from consultation.

Section 1: Diagnosing the policy problem

What is the context behind the policy problem and how is the status quo expected to develop?

What are the problems kerbside recycling and food scraps collections aim to reduce?

1. Kerbside dry recycling and food scraps collections return discarded materials from households back into useful resources for our economy. Recycled materials displace new material use. Food scraps are used for stock food or to make products and packaging replacing purpose grown crops. Compost or digestate returns the nutrients from food scraps back to the soil creating a circular food system. Keeping materials in our economy keeps value in our economy.
2. By contrast, landfilling resources creates an economic loss and causes environmental harms from greenhouse gas emissions from the impacts of extracting new raw materials to replace those we have just thrown away. These harms include deforestation, soil erosion, pollution, and biodiversity loss.
3. Many of these harms are not reflected in the cost of new materials meaning markets do not receive appropriate price signals to minimise these environmental costs. The Government is proposing intervention to better protect our environment and to accelerate the change.
4. The Government has set ambitious goals for a rapid transition to a circular, low-emissions economy. Kerbside recycling collections are a key part of our resource recovery system. Improving their performance will help us capture the economic opportunities of recirculating resources around our economy and reduce our greenhouse gas emissions and the environmental harms from wasteful resource use.

Aotearoa New Zealand generates too much waste

5. Household waste and other mixed and hazardous wastes are sent to Class 1 landfills.⁸ Waste sent to these landfills has increased by nearly 50 per cent over the past decade, reaching 3.7 million tonnes in 2018/2019 or 740 kilograms per person.⁹
6. Most households in Aotearoa New Zealand can dispose of materials they no longer want through rubbish and recycling collected from the kerb outside their house. An estimated 1.3 million tonnes of material was collected from kerbside in 2019, with roughly one third in recycling collections and two thirds in rubbish collections.¹⁰
7. New Zealand underperforms internationally. Countries with good household systems recycle and compost more than 45 per cent of household waste, with high performers heading for 60 per cent and looking likely to double our current performance.¹¹
8. This wasteful use of resources is unsustainable. If everyone in the world lived as New Zealanders do, we would hypothetically need two to three earths to supply the

⁸ New Zealand landfills are categorised into five classes by the material they are designed to accept. Class 1 landfills have the highest design requirements and can accept the most hazardous types of waste. As the classes ascend they accept less hazardous material. For example, Class 2 landfills accept construction and demolition waste, while Class 5 landfills can only accept virgin excavated material i.e. clean soil and rock.

⁹ Online Waste Levy System <https://environment.govt.nz/facts-and-science/waste/estimates-of-waste-generated/>

¹⁰ Yates S, 2019. Rethinking Rubbish and Recycling – bin audits. Prepared for the WasteMINZ TAO Forum by Sunshine Yates Consulting. Auckland: WasteMINZ

¹¹ https://eunomia.co.nz/wp-content/uploads/2020/08/Eunomia_EEB-Global-Recycling-Rates-Report-FINAL-v1.4.pdf slide 9. This report also notes common features of high performing systems pg 8.

resources.¹² In our kerbside rubbish alone it is estimated that more than 400,000 tonnes of recyclable or compostable materials are sent to landfill every year.

- The Waste Hierarchy is a core organising framework for Government policy on waste, resource efficiency and the circular economy. Together with the proposed Container Return Scheme, improving kerbside recycling addresses the “recycle” layer of the hierarchy. With a clear and well-functioning recycling system New Zealand has a sound platform for addressing higher levels of the hierarchy, such as improved re-use of materials, and reduced consumption.



We need to move to a circular economy – ōhanga āmiomio

- New Zealand operates primarily in what can be categorised as a linear economy. The dominant patterns of the economy involve a ‘take-make-waste’ approach to materials and products. This economic pattern relies on the extraction and importation of virgin materials and promotes replacement, over keeping products and materials in circular use. As population grows, the costs of a linear system become unsustainable. Countries cannot continue to extract evermore resources and then discard them into our environment.
- Globally, a shift towards a circular economy is gaining momentum through multi-lateral initiatives such as the European Union’s Circular Economy Action Plan, the Global Alliance for Circular Economy and Resource Efficiency, and the G7 Alliance on Resource Efficiency, as well as the growing number of countries with circular economy strategies and legislation.
- The Government is setting ambitious goals for a transition to a circular, low-emissions economy. In late 2021 the Government consulted on a new Waste Strategy¹³ with the headline statement of ‘a circular economy for New Zealand in 2050’. This is deliberately ambitious, achieving a circular economy within 30 years will require transformational change and require us to think differently about waste. The Waste Strategy has a proposed target for households to reduce their waste disposal by 60-70 per cent by 2030 and for businesses to reduce their waste by 30-50 per cent.

We also need to lower emissions

- Climate change is the greatest challenge of our time. It will be challenging to reduce our greenhouse gas emissions sufficiently to limit the global average temperature rise to 1.5°C above pre-industrial levels. New Zealand is targeting reductions in biological

¹² <https://www.overshootday.org/newsroom/country-overshoot-days/>

¹³ [New Zealand Waste Strategy](#)

methane emissions of at least 10 per cent below 2017 levels by 2030, and to at least 24–47 per cent below 2017 levels by 2050.

14. Biological materials in landfill, such as food scraps, paper, and wood, rot in the absence of oxygen and emit methane. Waste disposal and treatment in Aotearoa New Zealand produced 3.3 million tonnes CO₂e, around four per cent of gross emissions in 2019. The Climate Change Commission recommends reducing biological methane emissions from waste to at least 40 per cent below 2017 levels by 2035 and this is reflected in the targets for the draft ERP.¹⁴ Food scraps make up 9 per cent of waste sent to Class 1 landfills, but account for 22 per cent of these landfills' emissions.
15. Diverting food scraps from landfill is an action we can take now to reduce our emissions. It is practical and is likely to provide long-term benefits as we close and restore nutrient cycles. Increasing the quality and quantity of materials we recycle will also reduce global emissions as recycling is generally less energy intensive than producing new virgin materials.

What is the role of kerbside recycling in a low-emissions circular economy?

16. Kerbside recycling collections are a key part of our resource recovery system. Improving their performance will help us capture the economic opportunities of recirculating resources around our economy and reduce our greenhouse gas emissions and the environmental harms from wasteful resource use.
17. To function well in a low-emissions circular economy the kerbside recycling system needs to serve several parties:
 - **Households** purchase products and place packaging in kerbside recycling. In a well-functioning system, they will:
 - *have clarity about what can be recycled and how (affecting product choice and disposal)*
 - *have confidence that materials collected for recycling are actually recycled and produce high quality outcomes, reducing environmental impacts*
 - *have access to easy to use dry and food scrap recycling options.*
 - **Packaging producers and product retailers** produce or specify packaging materials including providing on pack recycling information. In a well-functioning system, they will:
 - *have clarity about what can be recycled and how (affecting packaging design and material selection)*
 - *be able to demonstrate reduced environmental impact by using recycled and recyclable materials*
 - *provide clear and consistent recycling information to households and the waste management sector*
 - *bear greater responsibility for end-of-life disposal and are incentivised to choose least impact least cost packaging (including less packaging).*
 - **Councils** organise and pay for most kerbside recycling collections. In a well-functioning system, they will provide services that:
 - *efficiently achieve quality waste minimisation outcomes*
 - *are cost effective for rate payers*
 - *are accessible and easy to use.*

¹⁴ <https://ccc-production-media.s3.ap-southeast-2.amazonaws.com/public/Inaia-tonu-nei-a-low-emissions-future-for-Aotearoa/Inaia-tonu-nei-a-low-emissions-future-for-Aotearoa.pdf>

- **Waste management and recycling companies** provide kerbside collections, collect, sort, sell and reprocess kerbside recycling. In a well-functioning system, they will:
 - *provide safe and efficient collection services*
 - *produce high quality and valuable recyclate*
 - *minimise contamination which downgrades quality and may be landfilled along with contaminated recyclable materials*
 - *have confidence in a consistent supply of high quality recyclate for reprocessing.*
- **Users of recycled materials** buy recycled materials for producing new products and packaging. In a well-functioning system users will:
 - *have confidence in consistent supply of high quality dry and organic recycled materials*
 - *design products and packaging to incorporate recycled materials and be recyclable*
 - *choose materials which can be reused or recycled multiple times*
 - *choose materials where possible that can be recycled in New Zealand.*

How are kerbside recycling collections performing now?

18. Household kerbside collections make up a third of the waste sent to Class one landfills. Class one landfills are New Zealand's most engineered and monitored landfills as they take mixed wastes, such as household waste, as well as the most hazardous wastes generated by our economy.
19. Household kerbside recycling collections are highly variable across New Zealand in terms of who has access to a collection, what materials are collected, and how the materials are collected. We know that this variation influences how well collections perform reducing public confidence in recycling and the quality and quantity of the materials collected.

Unequal access across New Zealand

20. Not all 67 local councils offer household kerbside recycling services. Currently nine councils rely on private user-pays recycling collections or offer no, or limited, collections¹⁵. Councils also differ on how large a community needs to be before it is offered a service.
21. At present 13 councils offer a kerbside food scraps collection to at least parts of their district or are in the process of rolling out a collection. A further 23 councils have proposals to start collections or actions to investigate a food scraps collection. The remaining councils do not.

What materials are collected is highly variable

22. No one type of recyclable material is collected by every council in the country. Most councils collect glass, but some do not; most councils collect paper and cardboard, but some do not. This causes confusion for the public which makes it difficult for recyclers to maintain clean streams of high-quality materials that are free from contamination and can be easily recycled.

How materials are collected is highly variable

23. Councils around the country use a variety of collection methods to collect rubbish and recycling. These range from comingled wheeled bins, to multiple crates for different

¹⁵ Far North District, Kaipara District, Kapiti District, Upper Hutt City, Waitaki District, Whanganui District, Rangitikei District, Gore District, and the Chatham Islands

collection materials, to some territorial authorities offering drop-off services only with no kerbside recycling.

High variability reduces public confidence, and the quality and quantity of collected recycling

24. The public's commitment to using recycling collections is strongly linked to whether they believe it is worthwhile. The variation in collections around New Zealand causes confusion and undermines the public's confidence in using our recycling system and its outcomes.
25. In 2020, a national survey of 1,000 people found the public could only correctly identify 20 out of 30 items as being recyclable or not and 51 per cent felt that knowing what they can and cannot recycle at home is confusing. Only 40 per cent of people were confident that all the recyclable items they put in kerbside recycling actually get recycled and 35 per cent believed that most recycling ends up in landfill.¹⁶
26. It is estimated that 16 per cent of all materials placed in kerbside recycling bins are contamination¹⁷, which equates to 35 kilos per household per year, or around 70,000 tonnes nationally. Equally, 13 per cent of materials are also placed into the rubbish bin which could have been recycled (around 108,000 tonnes annually). In total 178,000 tonnes of materials are being placed in the wrong bin at kerbside.
27. The type of bins and bags and the methods used for collecting and sorting materials affects contamination levels. Hand sorting recycling at kerbside has significantly lower levels of contamination, as unrecyclable items or contamination can be left behind at kerbside providing instant feedback to householders. Additionally, glass that is collected separately can be colour sorted at kerbside allowing the option of being recycled back into different colours of bottles. Separating glass from paper and cardboard (fibre) also prevents fine shards of glass from contaminating collected fibre and downgrading its value or ability to be recycled.

Reporting is limited but indicates low performance

28. Reporting on the performance of kerbside collections is not mandatory, and many councils do not report on the performance of their collections in a way that allows comparisons of the effectiveness of the different systems or their engagement with their communities to promote recycling. Of 14 councils that report diversion rates in their Waste Management and Minimisation Plans (WMMPs) the performance ranges from 19 per cent to 53 per cent (ie the percentage of material recycled from kerbside).
29. The Ministry estimates that of waste materials placed at kerbside on average only 35 per cent are placed into recycling collections and diverted from landfill.¹⁸ High performing countries are aiming to divert and recycle at least 65 per cent of kerbside materials.¹⁹ In New Zealand, the high contamination, by materials incorrectly put into recycling, also reduces the quality and value of the materials that are recycled.

What are the key factors contributing to kerbside recycling underperformance?

30. The two primary factors contributing to our kerbside underperforming are imperfect information (contributing to confusion and mistrust) and externalities (affecting service provision and behaviour).

¹⁶ Langley E, 2020. Rethinking Rubbish and Recycling – online survey. Prepared for the WasteMINZ TAO Forum by Colmar Bruton. Auckland:WasteMINZ.

¹⁷ Yates S, 2019. Rethinking Rubbish and Recycling – bin audits. Prepared for the WasteMINZ TAO Forum by Sunshine Yates Consulting. Auckland: WasteMINZ

¹⁸ Ibid

¹⁹ https://eunomia.co.nz/wp-content/uploads/2020/08/Eunomia_EEB-Global-Recycling-Rates-Report-FINAL-v1.4.pdf

31. **Information:** the highly variable nature of our kerbside recycling collections means it is unclear what materials are recyclable in kerbside across New Zealand. This affects actions by packaging producers, retailers, householders, and to some extent councils (affecting decisions about what materials to collect).
32. Increasing consistency across kerbside recycling services will reduce the likelihood of confusion and allows for consistent national messaging on packaging and in education campaigns.
33. Households also lack any market signals about the value of materials they dispose of to recycling or rubbish and have few feedback mechanisms on how well they present materials for recycling (ie, are they recycling the right materials and are they sufficiently free from contamination). At present providing feedback to individual households is very costly or incentives to recycle right are deemed to be too administratively costly. The lack of individual signals to householders increases the importance of a consistent system and messaging across the nation.
34. **Negative Externalities** – where the costs are not borne by the decisionmaker. The environmental harms caused by wasteful resource use are largely public harms. They are shared amongst us as a society with little direct impact on individual decisions. This weakens packaging, household, and disposal choices.
35. Partly in recognition of these externalities the costs of household kerbside recycling (collection, sorting, and costs due to contamination) are usually met by councils and in turn their ratepayers. However, important decisions that affect kerbside recycling are not made by ratepayers as a group such as packaging design and on-pack recycling information (producers and retailers), product choice and understanding of recyclability, adherence to, and understanding of, local recycling rules (individual householders).
36. Internationally it is becoming more common to address negative externalities by shifting costs from ratepayers to producers and users of the products and packaging to encourage greater responsibility for the impacts of product design and consumption choices. By shifting the burden of costs, producers are incentivised to move to more recyclable and sustainable packaging and products and to a more circular economy. Consumers are also incentivised to make more sustainable choices. The Government's proposal for a container return scheme (CRS) and the development of Regulated Product Stewardship for plastic packaging are two examples of action in this space.

How are recycling collections expected to develop if no action is taken?

37. Voluntary efforts by councils and industry have led to some increases in consistency of dry recyclables collected. However, there have also been some backwards steps with some councils no longer collecting recyclable items with strong markets here in New Zealand. Household and business food scraps collections are increasing, although slowly, and in an ad hoc manner not conducive to establishing efficient regional infrastructure. Reporting for household kerbside performance is limited, and while measures have been put in place to improve reporting from councils, reporting from the private sector (under proposals for national waste operator licencing) is not planned until 2026 at the earliest. Meanwhile we will remain unsure how well these services are doing and can provide little guidance on what 'best practice delivery' looks like.
38. The overall effect will be the continued under performance of our kerbside collections, lost economic opportunities and increased environmental harm. With no action there is likely to be insufficient change to meet the New Zealand Waste Strategy targets or provide a meaningful contribution to emissions reductions. Without change New Zealand would not be on a pathway to transform our economy into a circular low-emissions economy.

What are the key features of the regulatory system already in place in this area?

Previous Government commitments

39. The Government is committed to a low-emissions and climate-resilient future for New Zealand²⁰ where we use our resources more efficiently. Specifically, the Government has committed to an international target for climate change known as a Nationally Determined Contribution to reduce net emissions by 50 per cent below gross 2005 levels by 2030.²¹ In October the Government consulted on the ERP which sets out how emissions will be reduced.
40. Improving kerbside recycling is one of the Labour Party's 2020 election commitments, which stated that the Government "will work closely alongside local councils to implement standardised kerbside recycling in New Zealand" in order to improve the quantity of recyclable materials collected and processed.²²

The Waste Minimisation Act 2008 (WMA)

41. The WMA is New Zealand's main legislative framework for waste minimisation. It encourages a reduction in the amount of waste we generate and dispose of. The aim is to protect the environment from harm and provide New Zealand with economic, social and cultural benefits.
42. The WMA requires councils to promote effective and efficient waste management and minimisation through a six yearly WMMP. To provide for effective and efficient waste management and minimisation, most councils provide household kerbside collections of domestic rubbish and recycling.

The Basel Convention

43. The Basel Convention is an international agreement that controls the movement between countries of hazardous and other wastes. New Zealand is a signatory. In 2021, amendments to the Basel Convention placed restrictions on how mixed plastic waste could be exported. This was in recognition of the harm caused by developed countries dumping mixed plastic waste in developing countries, often under the label of 'recycling'. Bales with mixed plastics containing plastics #3, #4, #6, and #7 now need an export permit to be shipped overseas.

Aotearoa New Zealand Waste Strategy

44. The national waste strategy presents the proposed vision and aspirations for a low-waste Aotearoa, and how we plan to get there. It guides and directs our collective journey toward a circular economy. The strategy went out to consultation in November 2021 and proposes targets for waste reduction and diversion from landfill for households and businesses to be achieved by 2030, as well as a target for a reduction in biogenic methane.

Regulated Product Stewardship

45. Many companies rely on kerbside recycling collections to provide a more environmentally sound option for packaging disposal instead of landfill. The costs of this system are largely met by councils, their ratepayers, and in some cases the waste levy revenue (paid on waste disposed of to some classes of landfill).
46. Product stewardship involves companies taking responsibility for the end-of-life of the products they sell, removing this burden from communities, councils, and the

²⁰ <https://environment.govt.nz/what-government-is-doing/areas-of-work/climate-change/about-new-zealands-climate-change-programme/>

²¹ <https://www.beehive.govt.nz/release/govt-increases-contribution-global-climate-target>

²² <https://www.labour.org.nz/release-taking-action-to-reduce-waste-and-plastics>

environment. Product stewardship usually involves a scheme to collect used products and process them for re-use, remanufacture, and recycling with associated costs and revenues shared amongst scheme participants.

47. Product stewardship schemes provide alternatives to kerbside collections, or can contribute to kerbside collection costs, moving responsibility for end-of-life systems away from ratepayers and back to the users of these products and the companies that produce, import, or sell the products.
48. Some products stewardship schemes are voluntarily set up by industry such as Paintwise and the soft plastics recycling scheme.²³ The Government is also working with industry to develop Regulated Product Stewardship (RPS) schemes for six priority products, including electrical and electronic products, farm plastics, refrigerants, agrichemicals and their containers, tyres, and plastic packaging.²⁴
49. Product stewardship schemes often develop an alternative collection system to household kerbside collections especially where products are not suited to kerbside collection. In general suitable products for kerbside collections are medium-sized single-material packaging, that is easily identified and sorted. Where a class of products is suitable for collecting in kerbside, product stewardship schemes may provide a framework by which companies can contribute to the costs of kerbside collections and recycling their products at end of life.

Systems view of other related work programmes

50. In addition to the Waste Strategy, ERP, and regulated product stewardship for plastic packaging, improving household kerbside recycling and diverting food scraps from landfill has strong links with other components of the government's waste, circular economy and climate change work programmes. These include the follow workstreams, which you can find out more about in the Waste Reduction Work Programme:²⁵
 - Revised waste legislation (consultation late 2021, expected enactment 2024)
 - Long term waste infrastructure plan (expected publication in 2022)
 - Improved waste data systems (engagement with regulated parties 2021)
 - Waste disposal levy increase and expansion to fund investment (levy changes take effect from 1 July 2021, 2022, 2023, and 2024)
 - Container return scheme – investigation (consultation early 2022 – jointly with improving kerbside recycling)
51. Improving kerbside recycling collections also links into other government work programmes such as the Government's Economic Plan: for a productive, sustainable and inclusive economy.²⁶

²³Paintwise www.resene.co.nz, and soft plastics recycling scheme www.recycling.kiwi.nz

²⁴ [Regulated product stewardship | Ministry for the Environment](#)

²⁵ <https://environment.govt.nz/assets/publications/Waste-reduction-work-programme-final.pdf>

²⁶ <https://www.mbie.govt.nz/business-and-employment/economic-development/economic-plan/>

Summarising the problem - New Zealand kerbside recycling collections are underperforming

52. Kerbside recycling and food scraps collections are not diverting as much as they could from landfill and have high levels of contamination, causing problems for recycling and adding costs to our recycling system.
53. An underperforming kerbside recycling food scrap system contributes to:
 - a high per capita disposal of household waste to landfill
 - an unsustainable level of environmental harm due to New Zealand's high, and growing, resource use
 - avoidable climate emissions from landfilled organic materials
 - avoidable costs and a loss of value and opportunity for our economy.
54. Higher performance is necessary to:
 - reduce our climate emissions and contribute to proposed emissions targets in the emissions reduction
 - reduce our waste to landfill and contribute to proposed diversion and emissions targets in the Waste Strategy
 - improve public confidence and increase engagement with this foundational system in the circular economy.
55. Available evidence and comparison to international experience, suggests that our kerbside system is underperforming because:
 - Inconsistency across the country creates confusion and mistrust for households and packaging producers and specifiers, increasing contamination and decreasing the quantity, utility, and value of the materials collected.
 - A lack of access to services, predominantly food scraps collections but also in some areas dry recycling collections, means many of these materials end up in landfill instead of being circulated through our economy.

What objectives are sought in relation to the policy problem?

56. The three overall objectives for improving kerbside recycling performance are to:
 - reduce contamination and increase the quality of materials collected for dry recycling and food scrap recycling
 - increase the quantity of targeted materials placed in kerbside dry recycling and food scraps collections rather than in the rubbish
 - increase public confidence, participation and engagement in kerbside dry recycling and food scraps collections.

Section 2: Proposals and options considered to improve kerbside recycling performance

- 57. Six proposals are put forward to improve household kerbside recycling performance:
 1. A set of standard materials for kerbside dry recycling and foods scraps collections
 2. Food scraps collections for urban households
 3. Reporting on private sector household collections
 4. Setting performance targets for councils
 5. Options to reduce glass contamination of other recyclables
 6. Increase household access to kerbside dry recycling collections
- 58. One proposal for improving business recycling is also being put forward:
 7. Increase business food scraps diversion from landfill
- 59. Each proposal has options for how it could be implemented. This section assesses the options for each proposal against the counterfactual – how we expect things would turn out if we carried on as we are now.

Explanation of analysis

How the proposals link to the policy objectives for improving kerbside

60. In table 2 below the blue highlighted boxes show which objectives are expected to be affected by each proposal for improving kerbside recycling performance. Not every proposal achieves every objective. The proposals work together as a package, but they are also distinct and can be considered on their merits separately.

Table 2 Showing objectives achieved by the proposals

Section	Proposals	Objectives		
		Increase public confidence, participation and engagement in kerbside dry recycling and food scraps collections	Increase the quality of materials collected for dry recycling and food scraps collections	Increase the quantity of dry recycling and food scraps placed in recycling
2.A	A set of standard materials collected			
2.B	Household food scraps collections			
2.C	Private sector reporting (measures effect of any options adopted)			
2.D	Setting performance targets			
2.E	Reduce glass contamination of other recyclables			
2.F	Increase access to kerbside dry recycling collections			
2.G	Separation of business food scraps			

61. Note mandatory reporting does not directly achieve any of the three objectives but is needed to be able to measure whether the other proposals 2.A, 2.B, 2.D, 2.E, and 2.F have achieved the objectives.

62. For some proposals there are also trade-offs between the objectives. These are discussed in more detail for each of the proposals, but examples include:
- Maximising the quantity of recyclable materials collected can work against maximising quality. For instance, collecting aluminium foil increases the amount of aluminium collected but, as it is a lower quality of aluminium, it downgrades the bales of aluminium beverage cans which make up more than 90 per cent of the aluminium collected in kerbside recycling.
 - There can be a trade-off within the objective of public engagement and confidence in the system. For example, putting a wide range of recyclable material in one bin increases the ease of use for households, but decreases the ability to cleanly sort out materials, potentially undermining householder confidence in quality outcomes from our recycling system.

How the options for each proposal are evaluated

Evaluation criteria

63. Each proposal includes options exploring different ways to achieve the intended outcome(s). Evaluation criteria are used to assess how well options within each proposal meet the relevant objectives. Some evaluation criteria are common across proposals and some are proposal specific.
64. Three evaluation criteria are common across all proposals: *effectiveness*, *timeliness* and *cost*. How the common criteria are defined varies from one proposal to another. For example, *timeliness* under food scraps collections considers how well the option aligns with achieving the targets by the dates set in the Waste Strategy and ERP, whereas for standardising materials *timeliness* considers how soon a mechanism would be able to be put in place (eg, the action, agreement, or regulation required and how soon would councils, collection contracts, and where necessary sorting infrastructure be able to adjust). The specifics of each evaluation criteria are outlined in detail under each proposal.
65. Two criteria are proposal specific. The proposal to roll out household kerbside food scraps collections considers the economies of scale which can be achieved as these differ significantly from one option to another. The business food scraps proposal considers differences in the options compliance and monitoring regimes.
66. The criteria considering equitable and inclusive outcomes has been used where options may be more or less equitable. For proposals where options have negligible equality differences this criterion has not been used, for example, options for reporting on private sector household collections.
67. Options are scored across the criteria for that proposal. The five-point scoring scale starts with '0' which is equivalent to the status quo. Options can then be scored 'worse' or 'better' than the status quo ('-' or '+' respectively), or 'much worse' or 'much better' than the status quo ('--' or '++' respectively). A summary *low*, *medium*, or *high* shows how well the option achieves the objectives relevant to that proposal.

Effects and Impacts

68. For each option within a proposal the likely effects and impacts are considered. '*Likely effects*' considers how people, processes, or infrastructure will be affected by the options. '*Likely impacts*' considers the option's overall impact on the objectives of improving quality of material recycled, the quantity of dry recycling and food scraps collected (reducing emissions) and increasing confidence and engagement in the recycling system.

Indicative cost range for the proposals overall

69. The analysis in this interim impact statement is largely a qualitative assessment of the likely impacts relative to the other options. A cost benefit analysis has been commissioned and will provide further analysis to support final policy decisions should

proposals proceed. For present purposes, estimates for the proposals as a whole are provided which indicate the relative magnitude of costs involved. Note that in some cases greater capital investment in infrastructure can reduce ongoing operational costs changing the balance between the two types of costs.

Indicative capital and operational costs for household kerbside recycling proposals

70. The Ministry estimates that capital expenditure of \$65-85 million would be required to implement the six household kerbside recycling proposals. The largest costs relate to establishing new food scrap processing infrastructure and collection vehicles. Choices about the technology used will affect costs (for example, windrow composting is less expensive to establish than anaerobic digestion). To reduce emissions, electric collection vehicles could be purchased instead of diesel. Electric vehicles are significantly more expensive to purchase but much cheaper to operate, thereby reducing operational costs compared to diesel vehicles.
71. For ongoing operational costs, the weekly cost for the six proposals combined ranges from cents to less than a couple of dollars per household (assuming operational costs are passed on to ratepayers). Where councils fall in that range depends largely on the extent of a council's alignment to the proposals. For example, for councils that are already aligned to best practice collections additional costs are minimal. Conversely, for councils currently without food scraps or separated glass or fibre collections the costs would be higher.
72. How capital investment is funded can also shift who bears the costs and when. Waste levy revenue, forecast to increase in coming years, could be considered by central government to fund some capital expenditure, and by councils for operational costs.

Indicative capital and service costs for business food waste proposals

73. The Ministry estimates that \$24-38 million of additional processing infrastructure would be needed to process commercial food scraps, depending on the technology used. Currently service costs for weekly commercial food waste collections are higher than for an equivalent rubbish service although rates depend on the location and the degree of competition.

2.A. A set of standard materials for kerbside dry recycling and food scraps collections

74. This section considers options to increase consistency of materials in kerbside dry recycling and food scraps collections. The preferred option in the accompanying consultation document, is "*Collecting a standard set of materials in kerbside recycling*". In this impact statement this section also covers a standard set of materials for food scraps collections. The preferred option is therefore worded "*Collect a set of standard materials in council dry recycling and food scrap collections*".
75. Over the past five years councils and the resource recovery sector have voluntarily made efforts to standardise aspects of rubbish, recycling, and food scraps collections. Many in the sector now think that stronger support from central government is needed. This proposal assesses the potential impacts of different options to provide greater support to standardise the materials collected in household dry recycling and food scraps collections.

Relevant objectives

77. The primary objective of standardising materials is to increase the quality of materials collected but is likely to positively affect all three objectives:
- reduce contamination and increase the quality of materials collected for dry recycling and food scrap recycling
 - increase public engagement and confidence in kerbside dry recycling and food scraps collections
 - increase the quantity of targeted materials placed in kerbside dry recycling and food scraps collections rather than in the rubbish.

Current state and drivers for action

78. Currently councils can choose what to collect in dry recycling and food scraps collections which has led to significant variability even between neighbouring districts. Factors that can lead to different choices include the type of collection system, access to processing facilities, distance to markets, and the market prices of materials at the time a collection contract is set up or renewed.
79. At a structural level, council choice fits with the principles of subsidiarity, in delegating decision making as close to a service as is appropriate. On the other hand, the high levels of variability produces worse outcomes for the system nationally.
80. When the wrong materials, or excessively dirty materials, are placed in recycling and food scraps collections it is known as contamination. Removing contamination adds costs to the collection and sorting of dry recycling and food scraps. When it is too difficult or costly to remove contamination it degrades the quality of the recycled or composted product, affecting the potential uses and the price received. A circular economy aims to maintain the quality of recycled materials so they can be used for the same or similar uses. This requires low contamination in the final product.
81. Increasing the consistency of materials collected reduces confusion that can arise from the conflicting recycling and foods scraps messages from different councils. Greater consistency also allows for national messaging to reinforce the correct materials for dry recycling and food scraps collections. This could be both in the form of a national education campaign and also on-package labelling.
82. Greater clarity, participation, and engagement are likely to lead to a decrease in recyclable materials placed in the rubbish and an increase in the quantities placed in the appropriate collection.

Standard materials for dry recycling

83. Recognising that variability is leading to confusion, contamination, and landfilled resources, councils and the resource recovery sector have been working together through the industry body WasteMINZ to encourage wider adoption of a voluntarily standard set of materials for dry recycling collections.²⁷
84. The standard set of materials includes four key materials: paper and cardboard, aluminium and steel cans, glass bottles and jars and three types of plastic (PET, HDPE and PP). It excludes materials for which there are no or limited recycling markets when collected through household kerbside recycling collections (eg, plastics such as PVC or where the collection of the material causes issues at the recycling facility, such as soft plastics which can entangle machinery, or where they may contaminate other recyclables, such as compostable plastics).

²⁷ [Recommendations for standardisation of kerbside collections in Aotearoa | Ministry for the Environment](#)

85. Table 3 below shows that most of the materials from the standard set are already collected in almost all dry recycling collections.²⁸

Table 3: The number of recycling collections that accept the proposed standard materials

Standard set of materials for dry recycling	How many out of 67 districts accept the material in public or private kerbside dry recycling collections	
	Accept	Do not
Paper and cardboard (<i>known collectively as 'fibre'</i>)	65	2
Aluminium and steel cans	65	2
Glass bottles and jars	62	3
Plastic packaging #1 (<i>PET – polyethylene terephthalate</i>)	65	2
Plastic packaging #2 (<i>HDPE – high density polyethylene</i>)	65	2
Plastic packaging #5 (<i>PP - polypropylene</i>)	47	20

86. For eleven councils there would be no change as they currently collect the standard materials and only the standard materials. A further 28 collect all the standard materials, but also accept other materials which they would need to stop collecting. Nineteen councils accept five of the six standard materials (16 do not collect plastic #5, three do not collect glass). A further six councils would have to start collecting more than one material.

87. Most council collections are delivered under contract by private waste companies. The private sector may also provide collections individual collections on a commercial basis (households or businesses pay a fee to have rubbish or recycling collected). Private companies collect different materials in different areas depending on commercial decision about demand and profitability. Generally, the private collections align with the materials accepted by the local council.

Barriers to all council collections accepting plastic #5 (PP – polypropylene)

88. The biggest change, which we consider to be only a moderate change overall, would be for plastic #5 which is not accepted in 17 council collections. Plastic #5 is typically used in food packaging for items such as ice cream and yoghurt containers. It is included in the proposed standard materials because of its potential fit for our circular economy. It is highly recyclable and the recycled product has strong demand and value. New Zealand currently imports recycled plastic #5 to meet our manufacturers' demand, while at the same time we landfill a proportion of what we use.²⁹

89. Where it is accepted, plastic #5 is collected together with the other plastics accepted and would be unlikely to require new crates, bins, or vehicles. It may require upgrades to sorting equipment at materials reprocessing facilities.

90. The main reasons councils do not collect plastic #5 are concerns about:³⁰

- limited markets for plastic #5
- increasing contamination (where only plastics #1 and #2 are collected)

²⁸ Of the 67 local councils 59 offer kerbside dry recycling collections. A further six districts have some access to private dry recycling collections so have also been included (information collected in late 2021).

²⁹ [Polypropylene Recycling #5 | Plastics New Zealand](#) and [Spotlight on Circularity: Creating Circular Solutions for Polypropylene \(#5\) in New Zealand | Plastics New Zealand](#)

³⁰ MfE correspondence with Plastic NZ polypropylene working group, September 2021

- the cost of re-educating households, especially if weak markets meant flip-flopping to not collecting again
- collection contractor reluctance to change and contract timeframes
- a lack of infrastructure to sort plastic #5 at the materials recovery facility (optical sorters for an automated line, or more staff, bins and training for a manual sorting line).

91. These concerns have largely been addressed in recent years. Before 2018, most plastic collected for recycling was sent offshore. Rapid changes in offshore markets introduced a period of volatility for recycled commodities including plastic #5. Some councils stopped collecting it in this period. Since then, investment in onshore plastic processing has increased New Zealand’s capacity to process plastic #5. Public demand is also driving an increase in the use of recycled plastic. Demand for recycled plastic #5 is strong and expected to stay strong as we continue to move towards a more circular economy.
92. A clear national campaign would be aimed at reducing contamination and costs to councils for adopting the standard materials.
93. Continued central government investment in the resource recovery sector aims to fill gaps in infrastructure to support our circular economy. The Government has previously provided funding to upgrade facilities around the country to process plastic #5³¹. This type of investment is expected to continue to support plastic #5 given the strong domestic demand and ability to be locally reprocessed.³²

Other materials that councils may need to stop collecting

94. Eleven other materials are accepted by a handful of councils around the country, often only two or three councils for each material. Increasing consistency will also mean stopping collecting materials accepted by only a few councils.

Table 4: Number of recycling collection’s that accept materials other than the standard materials

Other materials accepted by some councils in kerbside dry recycling	How many out of 67 districts accept the material in public or private kerbside dry recycling collections	
	Accept	Do not
Expanded polystyrene	2	65
Soft plastics including shopping bags	3	64
Liquid paper board (eg, Tetra pak)	3	64
Plastic packaging #7 (<i>other plastics</i>)	6	61
Plastic packaging #6 (<i>PS - polystyrene</i>)	7	61
Plastic packaging #4 (<i>LDPE – low density polyethylene</i>)	9	58
Plastic packaging #3 (<i>PVC – polyvinyl chloride</i>)	10	57
Aluminium foil	13	54
Aluminium trays/plates	22	45
Aerosol cans (steel and aluminium)	42	25

³¹ [More action on waste – Government funds recycling infrastructure, moves to standardise kerbside collections | Beehive.govt.nz](#)

³² [Waste reduction work programme | Ministry for the Environment](#)

95. Aluminium foil, tray, plates and aerosol cans have recyclable metal content and are collected by a larger number of councils. However, the tonnage collected is low compared to aluminium and tin cans which mean they usually become contamination in the bales of recycled aluminium cans or steel food and beverage containers rather than being genuinely recycled. Some collectors and processors also have safety concerns about the potential for explosions from partly filled aerosol cans, especially when the propellant is flammable. See Appendix 1 for more detailed information on how these materials and the specific issues involved in ensuring they are genuinely recycled.

Standard materials for food scraps collections

96. Kerbside food waste collections are a more recently introduced service than dry recycling. Of the 67 local councils 10 currently provide a kerbside food scraps collection, while a further 26 plan to introduce collections.
97. The low number of services to date has limited the issues caused by inconsistency between collections.
98. Strong climate and circular economy drivers are likely to make household food scraps collections much more widespread. As they become more common adopting standard materials in collections should be considered to allow for national messaging, clarity for households, and to provide a consistent feedstock to the growing bioeconomy/food scraps processing sector.
99. Through WasteMINZ, councils have already agreed to a level of voluntary standardisation, by agreeing not to accept compostable packaging in food scraps or garden waste collections.³³
100. The standard materials proposed for kerbside food scraps collections are food scraps, and where garden waste is also collected, vegetation from gardening. This would exclude some items commonly considered compostable such as paper and cardboard, and compostable packaging made of plastic, fibre, or a combination of both. These materials have some risk of introducing contamination to our soils and the food we grow (eg, persistent bio-accumulative chemicals and microplastics). Details are discussed in Appendix 3 of the associated consultation document.³⁴

A system fit for purpose now and in the future

101. Packaging materials and circular economy technologies are rapidly evolving and changing. A consistent system across New Zealand provides more equitable access and efficient collections and processing. But it will also have to be adaptable to allow for innovation and change over time. A potential process to allow for changes to what is accepted over time are discussed in Part 2 of the associated consultation document.³⁵
102. It is likely that new additions would need to cover a class of materials rather than individual products, and that a product stewardship scheme would need to be in place to cover the costs of collection and processing.

³³ [Position statement from New Zealand composters on compostable packaging | WasteMINZ](#) Compostable packaging does not break down in most anaerobic digestion systems and is removed as contamination. Composting facilities typically do not accept compostable packaging in household food-scrap collections due to the high rate on non-compostable packaging being included. Facilities are unable to distinguish compostable from non-compostable packaging in the collected material, especially compostable plastic items which look identical to non-compostable plastic items. Therefore, most facilities screen out any materials that look like plastic. New Zealand councils have agreed that until the technology improves to enable non-compostable plastics to be easily identified and removed, current and future council-provided kerbside food and green waste collections will not accept compostable packaging.

³⁴ *Transforming recycling* [link to consultation document]

³⁵ *ibid*

Options discarded

103. This impact statement does not analyse providing direct financial incentives to councils for adopting the standard materials. This is due to the assumption that those councils that choose to collect materials that are additional to the standard materials will face minimal costs to stop collecting them. The main costs of change are in re-education and behaviour change which can be supported by a national campaign and collateral for councils.
104. The smaller number of councils which would need to start collecting standard materials may face extra collection or sorting costs. We assume minimal collection costs for plastic #5 as it would be collected with the existing infrastructure for plastics #1 and #2.³⁶ The Government has already offered funding to install optical sorters to assist with processing costs.
105. Three councils may need to start collecting glass and would face extra costs for crates, and collection vehicles. The Glass Packaging Forum has provided direct financial incentives for councils to start collecting glass since 2006. These incentives have not yet persuaded these three councils to collect glass.

Options considered to increase the national consistency of materials accepted in kerbside dry recycling and food scraps collections

106. Five options are analysed for increasing the consistency of materials accepted in kerbside collections. They are set out from least intervention to most.
 1. *Carry on as we are now (the counterfactual)*. Voluntary efforts to standardise materials continue.
 2. *A national education and behaviour change campaign*. A campaign to promote which materials are collected for recycling and how to minimise contamination.

Option 2 represents the minimum additional intervention from central government. Each further option would be in addition to a national education and behaviour change campaign as this tool unlocks some of the benefits of greater consistency throughout the country.
 3. *A voluntary code of practice*. This would clearly define a national set of standard materials, in addition to a national campaign.
 4. *Collect a set of standard materials in council dry recycling and food scrap collections*. Central government regulates what may be accepted in council kerbside collections, in addition to a national campaign.
 5. *Collect a set of standard materials in all kerbside collections (private and council services)*. Central government regulates what waste collectors can accept in kerbside collection.

³⁶ There may be additional sorting costs for plastic #5, we do not expect councils would face these costs. The government has previously provided direct financial support to companies operating materials recovery facilities for sorting infrastructure and is expected to continue to fill infrastructure gaps to establish the foundation of our resource recovery system. Refer earlier in section 2A.

Option 1 - Carry on as we are now (the counterfactual)

107. *Option:* Councils continue to have freedom to choose what materials they collect in dry recycling and food scraps collections. Voluntary efforts to standardise materials are likely to continue through industry bodies such as WasteMINZ.
108. *Likely effect:* It is likely that those councils willing to standardise have done so and further increases in standardisation are unlikely. Despite the voluntary guidance, variation may even increase over time. Recent examples have shown that some councils renewing contracts or setting up new services are still opting to collect items not widely collected across New Zealand, or which do not currently have recycling markets. National recycling and food scrap messaging would remain incorrect in some districts and may not receive sufficient buy to proceed. Packaging designers will remain unable to choose a material which is nationally recyclable or to place correct recycling information on the packaging.
109. *Likely impact:* Variation in collections and a lack of consistent messaging will continue to cause confusion for households. The confusion leads to more recyclable and compostable materials being placed in the rubbish, decreasing quantities collected, while more contamination is placed in dry recycling and food scraps collections increasing costs and decreasing quality. Our kerbside collections are likely to continue to underperform.

Option 2 - A national education and behaviour change campaign

110. *Option:* Central government or another entity runs a national recycling and food scraps education and behaviour change campaign. Councils continue to have freedom to choose to collect what materials they collect in dry recycling and food scraps collections. Voluntary efforts to standardise materials are likely to continue through industry bodies such as WasteMINZ.
111. *Likely effect:* Some councils have indicated the cost of re-educating households and changing behaviour is a barrier to adopting the standardised set of materials for dry recycling and a national campaign may be enough to bring them on board. However, all councils may not actively participate in a national campaign diluting its effect.³⁷ In addition, where councils do not collect the materials promoted in the national campaign confusion may increase for residents in those councils. Households and packaging designers will be clearer about which materials can usually be recycled nationally.
112. *Likely impact:* Household engagement and confidence are likely to be lifted by a national campaign but may be somewhat undermined by continued local differences and conflicting messages. The quantity of the standard materials collected in dry recycling is likely to increase, a positive for most councils except the few that do not collect the standard materials. Impacts on contamination and quality are likely to be more mixed. The resource recovery sector would benefit from some material of better quality.

Option 3 - A voluntary code of practice

(in addition to a national education campaign and behaviour change)

113. *Option:* Central government could provide official guidance on kerbside collections in a voluntary code of practice. The code would specify the core materials that should be collected in dry recycling and food scraps collections. Compliance by councils and waste operators would be voluntary, but highly recommended. A code of practice would be in addition to the national education and behaviour change campaign as in option two.

³⁷ For example the recent nationally-funded Love Food Hate Waste campaign was adopted up by 61 councils, with one council choosing to do its own campaign, and five choosing not to participate.

114. *Likely effect:* A code of practice would clearly set out the basis for consistent national collections. Together with a national campaign it may provide the impetus for more councils changing their collections to be more consistent. A code of practice would provide an enduring template for kerbside collections and, by highlighting changes that would be inconsistent, may help to limit later divergence from the standard materials.
115. *Likely impact:* Impacts of the national campaign are as described for option two above. The benefits of increased quantity and quality of materials collected may be slightly greater and more enduring if a voluntary code of practice persuades more councils to adopt the standard materials and reduces later divergence.

Option 4 - Collect a set of standard materials in council dry recycling and foods scraps collections (preferred option)

(in addition to a national education campaign and behaviour change)

116. *Option:* Central government regulates a standard set of dry recyclables and food scraps that must be collected in council kerbside collections (where councils provide or contract those collections). Materials not in the standard set cannot be collected through council kerbside collections but could be collected through other means such as transfer stations or community recycling centres. Mandatory standard materials would be in addition to the national education and behaviour change campaign as in option two.
117. *Likely effect:* A national campaign would be more effective as it would be accurate throughout the country and would not promote the wrong behaviour in some places. Households and packaging designers will have certainty about what can be accepted in kerbside collections throughout the country. The resource recovery sector is expected to benefit from more consistent quality and value of materials collected.
118. A small amount of variation may remain where councils do not offer kerbside collections or if private companies choose to offer a kerbside service which does not conform to the standard materials.
119. For most councils, complying with the standard materials would mean stopping collecting two or three materials. The main cost is re-education to inform households these materials are no longer accepted. This would be supported by the national campaign.
120. A small number of councils would need to start collecting one or more additional materials. Three councils would need to start collecting glass and may require new collection infrastructure such as crates, glass collection trucks, and processing equipment. One council currently only collects glass and would require new collection infrastructure for the other materials.
121. The biggest change is for plastic #5 (polypropylene) which 17 councils would need to start collecting. Some materials reprocessing facilities may have to upgrade sorting equipment to process this plastic.
122. *Likely impact:* Consistent messaging, national exposure, and more accurate on-pack labelling is expected to increase household engagement and confidence in kerbside recycling services, in turn leading to a moderate increase in the quantities of materials collected. Contamination due to conflicting messages about recycling would be expected to reduce improving the quality of collected materials.
123. *Mechanism and timing:* Under the current WMA the Minister may set performance standards for councils' WMMPs. A performance standard could be used to specify what can be collected in council kerbside dry recycling or food scraps collections. The standard could be put in place by mid-2023 with implementation by councils in 2024. Depending on how quickly the infrastructure to process plastic #5 can be upgraded, additional lead time may be needed for this material to be collected.
124. The WMA is also under review. Provision of a new legislative instrument better suited to this task is being considered. However, introduction of new legislation, if any, is not

expected until 2024, delaying regulation until 2025 and implementation until possibly even 2026.

125. A review mechanism would be necessary to allow for materials to be added or removed in response to changing conditions such as end markets, new materials or technology, or as priority product stewardship schemes are established. A review mechanism would need to balance commercial, practical, and environmental outcomes. The mechanism for reviewing the standard materials would assume more importance under a mandatory regime.

Option 5 – Collect a set of standard materials in all kerbside dry recycling and food scraps collections (council and private services)

(in addition to a national education campaign and behaviour change)

126. *Option:* Central government regulates a standard set of dry recyclables and food scraps that must be collected by any kerbside waste collector, private or council owned or contracted. Materials not in the standard set cannot be collected through kerbside collections. Mandatory standard materials would be in addition to the national education and behaviour change campaign as in option two.
127. *Likely effect:* All kerbside dry recycling and food scraps collections would be required to collect the same materials providing national consistency. A national campaign would be more effective as it would be accurate throughout the country and would not promote the wrong behaviour in some places. It will be easier for businesses identify and move to packaging that is recyclable in kerbside collections and households and will have certainty about what can be accepted throughout the country.
128. *Likely impact:* Consistent messages about the standard materials, including on the packaging itself, is expected to improve engagement and confidence in the recycling system and lead to a moderate increase in the quantities of materials collected. Contamination due to conflicting messages about recycling would be expected to reduce and improving the quality of collected materials. The resource recovery sector is expected to benefit from more consistent quality and value of materials collected.
129. *Mechanism and timing:* Government consultation on new waste legislation proposed to introduce national licencing of waste operators.³⁸ If national licencing went ahead, following the standard set of materials for kerbside dry recycling and food scraps collections could be included as a clause in a licence to operate.
130. If it goes ahead a waste licencing regime is not expected to be operational until 2026 at the earliest, delaying or diluting the effectiveness of a national education campaign until the licencing regime is implemented.
131. As in Option 4 a mechanism for reviewing the standard materials would assume more importance under a mandatory regime.

³⁸ Ministry for the Environment. 2021. [Te kawae i te haepapa para | Taking responsibility for our waste: Proposals for a new waste strategy; Issues and options for new waste legislation](#). Wellington: Ministry for the Environment.

How do the options to increase the consistency of materials compare to the counterfactual?

Table 5: Increasing the consistency of materials accepted in kerbside dry recycling and food scraps collections	Option 1	Option 2	Option 3	Option 4	Option 5
	Counterfactual – Industry continues to encourage voluntary adoption	A national education and behaviour change campaign	Voluntary code of Practice	Collect a set of standard materials in council kerbside collections	Collect a set of standard materials in all kerbside collections (council and private services)
	<i>Counterfactual</i>	<i>Assessed in comparison to the counterfactual</i>			
Effectiveness <i>Criteria:</i> -Degree of standardisation achieved This is assumed to flow through to: -effectiveness of national messaging -degree of contamination and quality -public engagement and trust; and to a lesser degree -quantity of standard materials collected	0 Some voluntary standardisation to date in the expectation that national standardisation is coming. However, divergence is likely over time if no further action is taken. No national messaging takes place.	+ Some additional standardisation may occur, but councils may diverge again over time. National messaging generally positive but promotes wrong behaviour in some districts.	+ Some additional standardisation may occur, but councils may diverge again over time. National messaging generally positive but promotes wrong behaviour in some districts.	++ National standardisation achieved. National messaging correct for all council kerbside collections. Likely to improve trust, quality, and quantity.	++ National standardisation achieved. National messaging correct for all kerbside collections. Likely to improve trust, quality, and quantity.
Timeliness <i>Criteria:</i> -How soon would the mechanism be able to be put in place (the action, agreement, or regulation)? -How soon would councils, collection contracts, and where necessary sorting infrastructure be able to adjust?	n/a No action planned	++ 2022-2023 National campaign could roll out in 2022 funding permitting. Indeterminate time to see impact of campaign across all areas/districts.	+ 2024-2025 Code of practice drawn up in 2023, but unlikely to see impact until after 2024 as any standardisation is likely to happen as collection contracts come up for renewal.	++ 2023-2024 Regulation of council collections in 2023. After which all materials can be collected except plastic #5, which may require an additional year to upgrade sorting infrastructure.	+ 2026 -2027 Regulation under a revised WMA in 2026. Includes private kerbside collections via proposed new licencing system for waste companies.

<p>Financial cost</p> <p><i>Criteria:</i></p> <p><i>The costs considered are to New Zealand as a whole, not individual parties such as councils or waste companies.</i></p> <p><i>Short term spans one to five years and indicates the costs of change.</i></p> <p><i>Long term is five to ten years out and indicates lower financial costs and increased revenues.</i></p>	<p><i>Short term: 0</i> Costs continue due to contamination and recyclable materials placed in rubbish.</p> <p><i>Long term: 0</i> Costs may increase if variation in collections, packaging materials, recycle labelling and contamination increase.</p>	<p><i>Short term: -</i> Cost of national campaign.</p> <p><i>Long term: +</i> Lower contamination costs and some additional capture of recyclables.</p> <p>Also beneficial to food scraps collections as they become widespread.</p>	<p><i>Short term: -</i> Cost of national campaign.</p> <p><i>Long term: +</i> Lower contamination costs and some additional capture of recyclables.</p> <p>Also beneficial to food scraps collections as they become widespread.</p>	<p><i>Short term: - -</i> Cost of regulation and council renegotiation of collection contracts.</p> <p>Cost of national campaign.</p> <p><i>Long term: ++</i> Lower contamination costs and additional revenue from improved quality and quality of recycling.</p>	<p><i>Short term: - -</i> Cost of licencing system for central government and private sector.</p> <p>Cost of national campaign.</p> <p><i>Long term: ++</i> Lower contamination costs and additional revenue from improved quality and quality of recycling.</p>
<p>Equitable and inclusive outcomes</p> <p><i>How well does the option provide equal opportunity to recycle the standard materials at kerbside?</i></p> <p><i>For all households to have confidence the materials placed in their kerbside collections have positive outcomes?</i></p>	<p>0</p> <p>Inconsistent access and confidence in outcomes. Some urban households will not be able to place the full set of standard materials in kerbside. Some materials accepted as recyclable will continue to be landfilled undermining confidence in kerbside collections.</p>	<p>+</p> <p>Inconsistent access for households, but less so than the status quo as some households will be able to recycle more than others.</p>	<p>+</p> <p>Inconsistent access for households, but less so than the status quo as some households will be able to recycle more than others.</p>	<p>++</p> <p>More equitable outcomes achieved as every urban household can recycle the same set of materials at kerbside.</p>	<p>++</p> <p>More equitable outcomes achieved as every urban household can recycle the same set of materials at kerbside.</p>
<p>Overall Assessment</p>	<p>(0)</p> <p>Unsatisfactory – will not achieve desired outcomes for New Zealand</p>	<p>(4) Medium</p> <p>Partially achieves desired outcomes for New Zealand but not consistently</p>	<p>(3) Medium</p> <p>Partially achieves desired outcomes for New Zealand but not consistently</p>	<p>(6) High</p> <p>Preferred option. Achieves desired outcomes in a timely manner</p>	<p>(5) High</p> <p>Achieves desired outcomes but takes longer to implement</p>
<p>Key for qualitative judgements:</p> <p>0 about the same as the counterfactual</p>		<p>- worse than the counterfactual</p> <p>-- much worse than counterfactual</p>		<p>++ much better than the counterfactual</p> <p>+ better than the counterfactual</p>	

What are the marginal costs and benefits of the preferred option (Option 4 - Collect a set of standard materials in council dry recycling and food scraps collections)?

Table 6	Cost	Benefit	Net impact	Evidence Certainty
Affected groups	Additional impacts of the preferred option compared to taking no action			
Households	Three councils introducing glass collections will have higher ongoing operational costs of additional service, passed on to householders through rates or PAYT/user charges.	Households will be able to recycle the same materials regardless of where they live and if they need to travel around New Zealand. This lessens confusion. Potentially higher satisfaction with service with clearer recycling and less rubbish.	Low Shifting the mix between rubbish and recycling is unlikely to have a significant net financial impact for householders. Reduces cost of recycling service with higher quality and quantity of material recycled and not disposed to landfill as contamination.	Low – CBA has been commissioned.
Councils (Territorial authorities)	Three councils introducing glass collections will have higher ongoing operational costs of additional service. Possible additional costs for collecting Plastic #5 in the short term. In the long term product stewardship for plastic packaging may offset. Possible reduction in revenue for councils collecting aerosols and foil. Variable costs for councils to communicate change depending on how different current services are to the standard materials. 11 councils already accept only the standard materials (no change). 40 councils will need to stop collecting one (25) or more (15) materials. 25 councils will need to start collecting one (19) or more (6) materials.	Leverages off existing investments in collection services and receptacles. Increase in revenue stream for recyclables due to larger volumes of recycling and lower contamination rates. Access to waste levy for ongoing operating costs associated with change to minimum standard. No significant outlay required for education programme and behaviour change if national. Economies of scale with all councils required to collect same material mix and requiring access to facilities with appropriate processing capability.	Low Impact across TA's will vary, but preferred option will require some level of investment (in new contracts or contract variation). Reduces cost of recycling service in the longer term with higher quality and quantity of material recycled and not disposed to landfill as contamination.	Low – CBA has been commissioned.
Waste Sector	Require investment in changes to processing facilities (eg, MRFs) to meet requirements in contracts with Councils, where new materials must be collected.	Higher quality and volume of material sell to end markets.	Medium Some additional investment collections and processing may be offset by increased revenue as quantity and quality of recycling increases over time.	Low – CBA has been commissioned.

<p>End Users (packaging manufacturers and specifiers, primary industries and energy sector)</p>	<p>Potential loss of customers if packaging is not part of standard materials and customers move to options with more recyclable packaging.</p> <p>Future changes in the standardised list of materials could incur costs especially if materials are removed.</p>	<p>Increased certainty for manufacturers around the recyclability of materials in kerbside.</p> <p>Increased high quality recycled material available for manufacturers to increase the recycled content in their products and packaging.</p> <p>Marketing opportunities through the promotion of recycled packaging or organic soil improvers (compost).</p> <p>Greater availability of high quality compost/digestate to improve soil structure and fertility and/or as feedstocks for bio-economy and bio-energy.</p>	<p>Medium</p> <p>Impact for end users around change in packaging specification and cost to implement.</p>	<p>Low – CBA has been commissioned.</p>
<p>Environment</p>	<p>No discernible additional cost to the environment by specifying standard list of materials. The non-acceptable materials ultimately still end up in landfill as they would if they were contamination.</p>	<p>Higher quality material collected supporting more circular uses, avoiding the need for new raw material.</p> <p>Greater clarity about materials which are accepted in kerbside encourages more packaging to switch to these more sustainable materials.</p>	<p>High</p> <p>The environmental benefits of specifying recyclables and organics that must be collected and diverting these from landfill are high.</p>	<p>High</p> <p>Easy to evidence environmental benefits of reduced volumes of waste to landfill.</p>

Summary of a standard set of materials for kerbside collections

The proposal to increase the consistency of materials collected in household kerbside recycling and foods scraps collections aims to further the sector's existing efforts to standardise materials.

Option 4 '*Collect a set of standard material in council dry recycling and food scraps collections*' is identified as the preferred option at this stage. It is likely to deliver the greatest benefits, within a reasonable timeframe, and at a mid-level of cost.

For most councils the impact would be ceasing to collect materials not widely collected and/or of questionable recycling merit. A smaller number of councils would need to start collecting a material or materials.

2.B. Food scraps collections for urban households

132. This section considers options to increase household food scrap diversion from landfill. The preferred option is "*Mandatory kerbside food scraps collections*" proposed to apply to all urban areas with a population of 1,000 or more.

Relevant objectives

133. This proposal primarily addresses the objective of:
- increasing the quantity of food scraps placed in kerbside collections rather than the rubbish.
134. The main driver for diverting food scraps from landfill is to reduce greenhouse gas emissions and contribute to the proposed ERP targets.³⁹
135. Secondary drivers are contributing to the proposed Waste Strategy targets and establishing the foundations of a circular food system. A circular economy requires returning nutrients and organic matter to the soil. The proposal seeks to increase food scraps collections to a scale sufficient to kickstart the infrastructure necessary to recycle foods scraps.

The current state and drivers for action

136. Five councils have been diverting food and green waste to compost via separate kerbside collections for some time. More recently, the number of councils with kerbside organic collections has increased to 10, and others are proposing new services or have trials underway.
137. Of the 67 local councils 16 per cent already provide a collection or are rolling one out, and 36 per cent intend to provide a collection, or have an action to investigate providing a collection. A third of councils have not indicated that they have plans to investigate a collection, and a smaller proportion, 12 per cent, have decided not to offer a kerbside food scraps collection for now, either because of funding constraints or their communities did not see it as a priority.

³⁹ The draft emissions reduction plan proposes to adopt the Climate Change Commissions recommendation to reduce biogenic methane emissions from waste to at least 40 per cent below 2017 levels by 2035.

We are wasting valuable resources

138. Food scraps and garden waste can be composted into products which improve soil quality, displace artificial fertiliser and improve water retention. Food scraps can also be anaerobically digested to generate power and produce a fertiliser called digestate.⁴⁰
139. In 2020, it is estimated we landfilled 350,000 tonnes of food waste, with 250,000 tonnes from households. Food waste makes up only 9 per cent of waste sent to Class 1 landfills each year, yet it currently accounts for 22 per cent of emissions generated by Class 1 landfills.⁴¹ These emissions can be produced for up to 50 years even after a landfill is closed. While some of these emissions can be captured to generate power, some still escape into the atmosphere. To reduce future emissions it is important to start removing food waste from landfill as soon as possible.
140. Councils will probably continue to roll out kerbside food waste collections, but it is unlikely that every council will choose to do so. On current rates New Zealand will not achieve the proposed 2030 targets in the Waste Strategy or the proposed 40 per cent reduction in biogenic methane in the draft ERP.⁴²

New food scraps processing infrastructure is needed

141. Some councils currently have composting facilities and anaerobic digestion facilities in their region with capacity to take more food scraps. In other parts of the country new or larger facilities will need to be introduced. We estimate that an additional nine large and four small scale facilities at a minimum will be required around the country to process food scraps into beneficial resources.
142. Regional collaboration is therefore key to building these facilities in a cost-effective manner and the private sector will also need confidence to invest.

What has been done overseas to increase food scraps diversion?

Table 7 Examples of international food scraps diversion policies

Country	Implementation	Effectiveness
Scotland	<p>Increased measures over time</p> <ul style="list-style-type: none"> 2010: funding was made available and technical support provided to implement food scraps collections. 2015: food scraps collections were made mandatory.⁴³ 	<p>High</p> <ul style="list-style-type: none"> 100 per cent of councils have food scraps collections with a 40 per cent increase in diversion since 2013.⁴⁴ Scotland is now going to ban the landfilling of biodegradable municipal waste by 2025.
Wales	<p>Mandatory targets with financial penalties</p> <ul style="list-style-type: none"> 2010: statutory weight-based targets for recycling (includes dry recyclable and food scraps) set for 2012-13 and beyond. Option to levy financial penalties against councils that fail to achieve targets. 	<p>High</p> <ul style="list-style-type: none"> 100 per cent of councils have food scraps collections. Initial recycling target of 58 per cent in 2015-16, stepped up to 64 per cent in 2019-20, and to 70 per cent in 2024-25.

⁴⁰ Anaerobic digestion facilities cannot accept garden waste. Compost and digestate are complementary products which improve the productivity of soils in different ways. They can be used separately or together.

⁴¹ Wilson D, Eve L, Ballinger A, 2020. Improvements to estimates of greenhouse gas emissions from landfills. Prepared for the Ministry for the Environment by Eunomia Consulting. Wellington: Ministry for the Environment.

⁴² If proposed targets are adopted. The Government consulted on the proposed Waste Strategy and the ERP in late 2021. The Government is now considering feedback from the consultations.

⁴³ <https://www.gov.scot/publications/policy-statement-zero-waste-regulations/pages/7/>

⁴⁴ <https://resource.co/article/food-waste-recycling-scotland-40-cent>

	<ul style="list-style-type: none"> Ring-fenced funding⁴⁵ for rolling out food scraps collections and technical support. 	<ul style="list-style-type: none"> Wales is considering increasing the recycling target to 80 per cent by 2034-35 due to the high degree of achievement.
England	Industry guidance <ul style="list-style-type: none"> 2016 WRAP provided guidance on best practice collections and has encouraged the rollout of food scraps collections but has not set targets or made collections mandatory. 	<p style="text-align: center;">Low</p> <ul style="list-style-type: none"> By 2018/2019 almost half of all councils, 160, still did not provide any food scraps collections for their residents.⁴⁶ In 2021, the English government consulted on introducing mandatory food scraps collections by 2023
Australia	Best practice model + additional funding <ul style="list-style-type: none"> In 2018/2019, Victoria had the largest number of households with organic kerbside collections (23 per cent) followed by South Australia (20 per cent) and New South Wales (17 per cent). Since 2012 New South Wales has invested \$105 million over 9 years on diverting organics from landfill.⁴⁷ 	<p style="text-align: center;">Low</p> <ul style="list-style-type: none"> In 2021, 33 per cent of NSW councils now have organic waste collections at kerbside.⁴⁸ In 2021, Victoria decided to standardise kerbside collections and require all councils to provide food and garden kerbside collections by 2030.
Canada	Mandating collections <ul style="list-style-type: none"> In 2016, Ontario mandated that medium and large councils had 7 years to implement food scraps collections as only 37 out of 444 councils had collections. Size of town and density of population per square metre determined which councils needed to implemented.⁴⁹ 	<p style="text-align: center;">High</p> <ul style="list-style-type: none"> Over 105 of these councils in Ontario have now implemented green bin kerbside collection programs for food and organic waste.

Options discarded

Food waste reduction

143. Research into household food waste in 2015⁵⁰ and 2018⁵¹ found that 37 per cent and 33 per cent respectively of all food waste is unavoidable (ie, cannot be eaten, such as banana skins and avocado stones). The average household generates 55 kilos of unavoidable food scraps per annum.⁵² Encouraging households to reduce their food waste has significant financial and social benefits and should be encouraged. However,

⁴⁵ <https://network.efwconference.com/posts/waste-not-want-not-what-the-world-could-learn-from-wales-food-waste-programme>

⁴⁶ <https://www.itv.com/news/2020-02-10/councils-face-rolling-out-food-waste-collections-to-millions-more-homes>

⁴⁷ <https://www.environment.gov.au/system/files/pages/5a160ae2-d3a9-480e-9344-4eac42ef9001/files/national-waste-report-2020.pdf>

⁴⁸ <https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/business-government-recycling/food-organics-and-garden-organics>

⁴⁹ <https://www.cbc.ca/news/canada/windsor/large-ont-cities-have-7-years-to-add-curbside-collection-of-organic-and-food-waste-1.4647042>

⁵⁰ Yates S, 2015 New Zealand Food Waste Audits 2015 Prepared for the WasteMINZ TAO Forum by Sunshine Yates Consulting. Auckland: WasteMINZ

⁵¹ Yates S, 2018 New Zealand Food Waste Audits 2018 Prepared for the WasteMINZ TAO Forum by Sunshine Yates Consulting. Auckland: WasteMINZ

⁵² Ibid.

we view this as complementary to rolling out kerbside food scraps collections rather than a replacement given the quantity of inedible food scraps and the inevitability of some edible food scraps.

Home composting only

144. The Ministry commissioned research into home composting in 2021 and found that 25 per cent of households have no access to a garden or outdoor area.⁵³ The research also showed that of those who compost food scraps, 85 per cent compost fruit and vegetable scraps but only 35 per cent compost cooked food and 11 per cent compost meat and dairy products (which can be more easily processed at a commercial facility). Of those who do compost fruit and vegetable scraps, 50 per cent would still benefit from a food scraps collection as they do not compost leftovers.
145. Food waste reduction and home composting have been promoted by councils for some time, food waste reduction through the Love Food Hate Waste campaign and home composting through initiatives such as the Compost Collective. These programmes will provide incremental gains and should be encouraged, but larger scale change is needed to meet the targets in the Waste Strategy and ERP.

Drop-off services only

146. In some parts of the world, community composting hubs have been set up where residents are expected to drop off their food scraps to a central location. This type of system can work well in more rural settings, towns with smaller population centres, and pockets of towns and cities with high levels of local engagement. However, collections that rely on residents to bring their food scraps disadvantage those without their own transport, and those with physical disabilities. They can also increase vehicle movements increasing emissions. In a circular economy, with high levels of food waste diversion, drop-off services as described above will thrive, but will not be enough on their own. To achieve the targets in the Waste Strategy and the ERP, New Zealand would need to maximise participation rates.⁵⁴ For the purposes of this impact statement, drop-off services could still be considered, but for communities of under 1,000 population.

Charge a higher waste levy for household food scraps disposal to landfill

147. This option was discarded as impractical to audit and enforce and unlikely to influence household behaviour. Unlike businesses, many households have rates-funded rubbish collections and do not face the direct costs of kerbside rubbish disposal. Even under pay as you throw systems, the amount of waste disposed of is small enough that only large changes in cost are likely to affect disposal choices.
148. Whether for council or private waste collectors it would be costly to check whether households were disposing of food scraps in the rubbish, and it is likely a levy would operate on estimated averages across collected household rubbish. While this may incentivise waste collectors to offer a separate food scraps collection, it would only do so by increasing disposal costs beyond the cost of a separate collection.
149. Both administratively and practically, the option would be more costly than any of the other options considered, except possibly a ban on food scraps to landfill.

⁵³ Butt T, 2021. General public attitudes to composting and compostable packaging – survey report. Prepared for the Ministry for the Environment by UMR. Wellington: Ministry for the Environment.

⁵⁴ Note a kerbside collection service does not preclude community composting hubs being used to process the material collected.

Options considered for increasing household collection of food scraps

150. Six options are analysed for increasing the diversion of household food scraps from landfill in New Zealand. They are set out from least intervention to most.

1. *The counterfactual or carrying on as we are now.* Kerbside food scraps collections continue to be rolled out, but slowly and in a patchy manner.
2. *Technical support and increased investment* to encourage faster uptake by councils of collections and infrastructure development.

Option 2 represents the minimum additional intervention from central government. Each further option would be in addition to technical support and increased investment. These are required if councils are to implement collections faster and more effectively.

3. *A voluntary food scraps diversion target*, in addition to technical support and increased investment, to encourage faster uptake by setting a national level of ambition and seeking joint commitments from councils and industry.
4. *A mandatory food scraps diversion target*, in addition to technical support and increased investment, but it allows flexibility in how it is achieved.
5. *Mandatory kerbside food scraps collections*, in addition to technical support and increased investment. All councils are required to implement collections increasing the likelihood of regional coordination and efficiencies.
6. *Ban disposal of food scraps to landfill*, in addition to technical support and increased investment. This highest level of ambition requires development of many alternatives to divert household (and business) food scraps from landfill, including kerbside collections.

Upper limits of diversion and emissions reduction food scraps options

151. It is estimated that New Zealand households and businesses now send 350,000 tonnes of food scraps to landfill each year, at least three quarters from households. Under the most ambitious option, a ban on disposal of food scraps to landfill by 2030, it is assumed that 374,000 tonnes, or 95 per cent of projected annual food scraps, could be diverted in 2030. Factoring in a stepped reduction the Ministry for the Environment estimates that this could reduce annual emissions by 144 kt COe in 2030.⁵⁵

152. For comparison, the Climate Change Commission provided a demonstration pathway to achieve the proposed emissions budgets. To be on track in 2030 biogenic methane emissions from waste should be reduced by 633 kt COe. Other policies such as diverting other organic materials such as timber from landfill and increasing landfill gas capture are required to achieve the full reduction mapped out. The maximum contribution that food scraps diversion can make, as described in the ambitious option above, is 23 per cent of that reduction.

153. The impact of the options below are compared to the maximum contribution for food scraps diversion of 144 kt COe in 2030.

Option 1 – Counterfactual: patchy adoption

154. *Option:* Kerbside food scraps collections continue to be rolled out but slowly and in a patchy manner.

155. *Likely effect:* It is likely that councils will continue to roll out collections over time, but not every council will choose to do so. Auckland Council plans to implement a city-wide

⁵⁵A ban scenario also assumes a number other food scraps emission reduction measures are taken to support the ban such as kerbside collection systems and investment in new food scraps processing facilities.

food scraps collection by 2023. So even under the status quo option an additional 33 per cent of New Zealanders will be able to divert their food scraps from landfill.

156. *Likely impact:* If there is no further intervention the speed of council rollouts is unlikely to meet the proposed 2030 New Zealand Waste Strategy targets or make a meaningful contribution to the ERP targets for biogenic methane.
157. The Ministry's scenario modelling indicates that under the counterfactual an additional 42,000 to 57,000 tonnes of food scraps are likely to be diverted annually by 2030. This would reduce annual biogenic methane emission by 22 to 30 ktCO₂e in 2030, providing 16 to 22 per cent of the maximum reduction.

Option 2 – Technical support and increased investment

158. *Option:* Central Government provides technical support to councils to start collections, and support to councils or companies to set up processing facilities. Options to increase investment are explored including from private companies or central government funds.
159. *Likely effect:* Increased investment is likely to speed up the adoption of food scraps collections. For smaller councils, the initial capital cost of collection bins and transition costs needed to roll out food scraps collections can be significant. Other councils may lack a local facility to process the food scraps.
160. A third of councils have the implementation of food scraps collections as an action in their WMMPs and may be interested in taking advantage of increased investment. Some councils that have decided not to offer kerbside food scraps collections made that choice because of financial barriers. The availability of funding for business cases and options analysis may help councils make a business case for inclusion in subsequent WMMPs.
161. The effectiveness of existing collections can also be enhanced by research, for example research into participation rates and which sectors of the community are less likely to participate.
162. Research by individual councils can be expensive and may not be shared widely. Whereas common and publicly available research allows many organisations and councils to benefit and can help councils planning new collections.
163. In New South Wales and Western Australia, councils are provided with a best practice communications tool kit for rolling out food scraps collections which has saved individual councils from designing their own materials, saving time and money and ensuring consistent messaging.
164. *Likely impact:* Assuming investment allows all councils which have indicated an interest in food scraps collections to implement them, then by 2030 more than half of councils and most of New Zealand's population may have food scraps collections in place. However, it is unclear if regional processing facilities would be built near every council that is interested. Processing facilities may also be built at a less than ideal scale, because of uncertainty about when other neighbouring councils may start a collection.
165. The Ministry estimates that, in addition to the counterfactual, a further 25,000 to 36,000 tonnes of food scraps are likely to be diverted annually by 2030. The total food scraps diversion, including the counterfactual, would reduce annual biogenic methane emission by 42 to 60 ktCO₂e in 2030, providing 30 to 43 per cent of the maximum reduction.
166. *Note:* Option 2 represents the minimum additional intervention from central government, which would enable councils to implement food scraps collections faster and more effectively. Implementation is still likely to be ad hoc and not all councils may participate, even with increased support.
167. Each additional option below includes increased investment and technical support, but also additional intervention.

Option 3 – A voluntary target for food scraps diversion from landfill

(in addition to technical support and investment)

168. *Option:* A voluntary food scraps diversion target, in addition to increased investment and technical support. A target could be set at a level required to make a significant contribution to meeting the proposed Waste Strategy's household waste diversion target of 60-70 per cent by 2030.
169. *Likely effect:* A voluntary target could encourage councils to implement a food scraps collection by setting a national level of ambition. Councils may commit to the target to show their communities they are playing their part in reducing emissions and moving to a more circular economy.
170. A voluntary target could encourage councils that do not currently have an action to investigate food scraps collections to include this in their WMMPs.
171. Councils would have flexibility about how they choose to meet this target. There is a risk that councils may choose cheaper options such as promoting home composting to try to achieve the target, which research indicates is likely to fall short. As mentioned earlier, an increasing number of households in New Zealand cannot, or do not, compost at home and very few choose to compost all types of food scraps.
172. *Likely impact:* With few consequences, councils may choose not to prioritise meeting a voluntary target. The uncertainty about whether all the councils in a region will implement a collection also reduces the likelihood of successful regional coordination, potentially undermining efficiencies and economies of scale. This is of particular concern in regions where new processing infrastructure will be needed.
173. Councils would likely have difficulty in compiling data to report against a food scraps diversion target. Due to the expense, councils may only conduct solid waste audits once every six years in preparation for their WMMP. In order to determine the percentage of organic waste diverted from landfill, these audits would need to be much more frequent.
174. The Ministry estimates, in addition to the counterfactual, 34,000 to 49,000 tonnes of food scraps are likely to be diverted annually 2030. The total food scraps diversion, including the counterfactual, would reduce annual biogenic methane emission by 46 to 66 ktCO₂e in 2030, providing 33 to 48 per cent of the maximum reduction.

Option 4 – A mandatory food scraps diversion target

(in addition to technical support and investment)

175. *Option:* A mandatory target requiring councils to divert a specified percentage of food scraps from landfill by 2030.
176. *Likely effect:* As with Option three, a diversion target allows councils flexibility in terms of achieving the outcome, although kerbside collections would be the most likely way to achieve any substantive target. Some uncertainty remains about whether all the councils in a region would implement a collection, potentially undermining regional coordination efficiencies and economies of scale.
177. Any mandatory target would have compliance, monitoring and enforcement costs similar to those in Option 3, but they may be more onerous to provide robust reporting against a mandatory target.
178. *Likely impact:* Many councils may choose to provide a kerbside food scraps collection as the most straightforward way to reach a diversion target. It may promote some increase in cooperation and efficiencies. As in Option 3 measuring progress towards the target would likely require frequent solid waste audits which are costly.
179. The modelled impact, in addition to the counterfactual, estimates 58,000 to 83,000 tonnes of food scraps are likely to be diverted annually 2030. The total food scraps diversion, including the counterfactual, would reduce annual biogenic methane

emission by 54 to 78 ktCO₂e in 2030, providing 39 to 56 per cent of the maximum reduction.

180. *Mechanism and timing:* A mandatory target could be set in a performance standard under the WMA as it is now (sections 48 and 49), or once the current review of the WMA has been completed. The review is likely to provide more appropriate compliance, monitoring and enforcement powers.
181. Under the existing WMA a performance standard could be in place in 2023. Targets may need to be phased to allow for new food scrap processing facilities to be built in some regions. The earliest date for achieving a target is unlikely to be set any earlier than 2025, therefore it may make more sense to wait until more appropriate powers are available under an amended Act, anticipated to be 2024, with regulation then in place by 2025.

Option 5 – Mandatory kerbside food scraps collections (preferred option)
(in addition to technical support and investment)

182. *Option:* Require councils to implement kerbside food scraps collections by 2030.
183. *Effect:* Mandating the collection of food scraps would encourage greater regional collaboration between councils as all councils would need to implement these collections. This is of particular importance in regions where new processing facilities are required.
184. We are proposing kerbside collections to be mandatory in urban areas with a population of more than 1,000 people and in areas which have existing kerbside collections. In more rural areas, households tend to have a greater ability to manage their own food scraps due to larger gardens and friends and neighbours with chickens and pigs. As households become more widely dispersed it also takes additional resources and cost to collect from each one, leading to diminishing marginal benefits.
185. Around 4.3 million people, 85 per cent of NZ's population, live in urban areas of 1,000 people or more. We are aware of recent analysis by some councils that suggest a cut-off size of 1,000 people is feasible (eg, Waimate District Council has implemented collections to towns of this size). However, it may be feasible for towns with even smaller populations. We anticipate gaining more information on the practical minimum size through consultation.
186. The Ministry has identified a minimum of 13 regions around the country where new processing infrastructure is required or significant upgrades to existing facilities. If there is less regional collaboration, a greater number of facilities may be needed. By mandating collections within a specified timeframe, councils would have a greater incentive to work together, and regional infrastructure could be appropriately sized. Equally, there could be cost efficiencies for procurement of bins, shared messaging and media spend.
187. *Likely impact:* This option would enable collection of more food scraps. Compliance, monitoring and enforcement costs would be lower than for Option 4 as solid waste audits would not be required to determine whether a target had been met. Instead, the council would be able to report on tonnes diverted with the information supplied by the processing facility. Reporting on tonnes diverted is a standard inclusion in kerbside contracts.
188. The modelled impact, in addition to the counterfactual, estimates 68,000 to 98,000 tonnes of food scraps are likely to be diverted annually 2030. The total food scraps diversion, including the counterfactual, would reduce annual biogenic methane emission by 57 to 82 ktCO₂e in 2030, providing 41 to 59 per cent of the maximum reduction.
189. *Mechanism and timing:* As for Option 4, a performance standard could be set under the existing WMA by 2023, but it may make sense to use an equivalent mechanism under revised waste legislation. Using revised waste legislation, regulation could be in place

by 2025. If clearly signalled in advance, this is not expected to significantly delay action due to the lead times necessary for starting new collections and, where required, building new processing infrastructure.

190. It is proposed that the requirement to implement food scraps collection is phased in two tranches. Councils with access to existing facilities for processing food waste would have a shorter time frame for implementation, whilst councils in regions where new facilities would need to be built would have longer.

Option 6 – Ban all food scraps disposal to landfill

(in addition to increased investment and support)

191. *Option:* Ban the disposal of food scraps to landfill by 2030. Phased implementation could include an earlier deadline of 2025 for districts and cities which already have appropriate food scrap processing capacity.
192. The ERP consultation document proposed “*that all organic material disposal be banned from Class 2–5 [landfills] by 2030. In addition, key organic materials such as food, green, and paper waste could also be banned from Class 1 landfills by 2030.*”⁵⁶ Household waste is only accepted at Class 1 landfills.
193. *Likely effect:* Systems would need to be established to ensure food waste was not disposed of to landfill. Adequate collection and processing infrastructure would need to be developed (including in both urban and rural areas) to ensure food scraps could be disposed of in other ways. A ban would be likely to require a greater level and wider range of infrastructure and collection fleet than Option 5 to ensure that population centres less than 1,000 population would be able to divert their food scraps.
194. Bans on landfilling food scraps (or more broadly biodegradable materials) are typically enforced at landfill and require the landfill operators to inspect and accept or reject loads.⁵⁷ Where waste tracking systems are legislated these can be used to verify that waste does not contain, or no longer contains, the banned material such as food waste. Currently, New Zealand does not have a waste tracking system. Therefore, monitoring would be required at disposal sites and/or of households’ and businesses’ waste disposal to support a ban.
195. *Likely impact:* This option has the highest compliance cost due to the level of auditing required. However, it is the option which would have the maximum impact on waste to landfill and emissions reductions.
196. By 2030 a ban is estimated to divert 374,000 tonnes per annum of both household and commercial food scraps from landfill. The total food scraps diversion, including the counterfactual, would reduce annual biogenic methane emissions by around 144 kt CO₂e in 2030, and contribute about 23 per cent of the Climate Change Commission’s modelled reduction pathway.
197. *Mechanism and timing:* Section 23(1)(a) of the WMA could be used to ban the disposal of food waste to landfill. This provision requires adequate infrastructure is in place and a reasonable time for adjustment is given. A ban could be drafted relatively quickly, but it is expected that it would not come into force until 2030 to allow adequate infrastructure to be put in place. Other options that encourage infrastructure development could be seen as a first step towards a ban if it becomes necessary.

⁵⁶ [Emissions-reduction-plan-discussion-document.pdf \(environment.govt.nz\)](#)

⁵⁷ [Landfill Ban Investigation \(awe.gov.au\)](#)

How do the household food scraps collection options compare to continuing as we are now?

Table 8: Incentivising the roll out of food scraps collections	Option 1 <i>Counterfactual</i>	Option 2 Technical support and increased investment	Option 3 Voluntary food scraps diversion target	Option 4 Mandatory food scraps diversion target	Option 5 Mandatory food scraps collections	Option 6 Ban on all food waste to landfill
	<i>Counterfactual</i>	<i>Assessed in comparison to the counterfactual</i>				
<p>Effectiveness</p> <p><i>Criteria:</i> How many tonnes of food scraps are diverted from landfill (and therefore landfill emissions reduced)? How ready and willing are councils to implement collections? The effectiveness of similar interventions overseas.</p>	<p>0</p> <p>Slowest and most variable uptake of food scraps collections. Highest environmental harm. Most organic material lost to landfill (<i>Waste strategy tonnage targets unlikely to be met in time</i>). Least likely to reduce biogenic methane emissions (ERP targets more difficult to meet).</p>	<p>+</p> <p>Support and investment are likely to motivate councils who have lagged due to smaller ratepayer base to fund new services. Slow and variable uptake of food scraps collections. Minor reduction in environmental harm. Unlikely to meet waste or emissions targets.</p>	<p>+</p> <p>Primary driver will be the support and investment available. Slow and variable uptake of food scraps collections depending on the availability of funding. Moderate reduction in environmental harm. Unlikely to meet waste or emissions targets.</p>	<p>+</p> <p>Fast uptake of food scraps collections but some exceptions. Large reduction in environmental harm. Some chance of meeting waste or emissions targets. Difficulty in measurement and enforcement.</p>	<p>++</p> <p>Fast and comprehensive uptake of food scraps collections. Large reduction in environmental harm. Good chance of meeting waste and emissions targets. Able to establish and enforce compliance more easily than other options.</p>	<p>++</p> <p>Comprehensive uptake of food scraps collections Least environmental harm. Most likely to meet waste and emissions targets. Some transition time for new services and behaviours to lower food waste disposed of in household rubbish.</p>
<p>Efficiency / Economies of scale</p> <p><i>Criteria:</i> How well the option promotes regional coordination, efficiencies in service design and communication, and sizing of new processing infrastructure.</p>	<p>0</p> <p>Higher costs for those that do implement collections due to lack of regional infrastructure efficiencies as each council develops services individually.</p>	<p>+</p> <p>Minimal savings Potential for greater uptake which allows some regional efficiencies and shared service implementation.</p>	<p>+</p> <p>Minimal savings Potential for greater uptake which allows some regional efficiencies and shared service implementation.</p>	<p>++</p> <p>Moderate savings Most Councils would be likely to implement a food scraps collection. But some may not, reducing regional efficiencies</p>	<p>++</p> <p>Significant savings Mandatory uptake provides significant regional and service coordination and efficiencies.</p>	<p>++</p> <p>Significant savings Mandatory uptake allows significant regional and service coordination and efficiencies.</p>
<p>Timeliness</p> <p><i>Criteria:</i></p>	<p>0</p>	<p>0</p>	<p>-</p>	<p>++</p>	<p>++</p>	<p>+</p>

<i>How well the option aligns with achieving the targets by the dates set in the New Zealand Waste Strategy and the ERP?</i>	No action planned, but ad hoc changes likely to occur slowly	Technical guidance and investment possible in 2023. Indeterminate timeframe to achieve waste and emissions targets but faster than Option 1.	An agreed target could be developed by 2023 Progress towards waste & emissions targets faster than Option 2	Direction of travel indicated immediately. Regulations could be in place by 2024 under the WMA or 2025 under revised waste legislation. Progress towards waste & emissions targets faster than Option 3	Direction of travel indicated immediately. Regulations could be in place by 2024 under the WMA or 2025 under revised waste legislation. Progress towards waste & emissions targets faster than Option 4	Direction indicated immediately but not likely to be fully in force until 2030. May be more effective if follow an intermediate option
Cost <i>Criteria:</i> <i>How costly to implement this option relative to the counterfactual?</i>	0 Medium cost Costs are spread out over time. Least cost as fewest collections. Collections that are started may be more costly due to lack of scale	- Medium cost Cost of increased investment. Councils choosing to implement face reduced costs.	- Medium cost Cost of increased investment. Councils choosing to implement face reduced costs.	-- High cost Cost of increased investment. Many councils will face costs to implement.	-- High cost Cost of increased investment. Most councils will face costs to implement.	-- Very high cost Cost of increased investment. All councils will face costs to implement. Businesses are also affected.
Equitable and inclusive outcomes <i>Criteria:</i> <i>How fairly the option treats all stakeholders (rural, urban, future and current generations, the elderly and those with disabilities)</i>	0 Communities have greatest freedom to choose priority of food scraps collections, but households have unequal access to food scraps collections.	+ Minor change Reduced cost barrier is likely to mean greater access for more communities, but still unequal.	+ Minor change Increased uptake is likely to mean greater access for more communities, but still unequal.	++ Significant change Widespread uptake is likely to mean widespread access for communities, but some exceptions.	++ Significant change Mandatory uptake means high access across communities, with flexibility or tailored approach for dispersed communities.	++ Significant change Mandatory uptake means greatest access across all communities.
Overall assessment	(0) Unsatisfactory – will not achieve desired outcomes for New Zealand.	(2) Low Partially achieves desired outcomes for New Zealand.	(2) Low Partially achieves desired outcomes for New Zealand.	(5) High Mostly achieves desired outcomes.	(6) High Preferred option. Mostly achieves outcomes in a timely manner at least cost.	(5) High Achieves outcomes but takes time and most costly.
Key for qualitative judgements: 0 about the same as the counterfactual		- worse than the counterfactual -- much worse than counterfactual		++ much better than the counterfactual + better than the counterfactual		

What are the marginal costs and benefits of the preferred option (Option 5 – mandatory kerbside food scraps collections)?

Table 9	Cost	Benefit	Net impact	Evidence Certainty
Affected groups	Additional impacts of the preferred option compared to taking no action			
Households	Higher ongoing operational costs of food scraps service passed on to householders through rates. Additional time to separate food scraps.	Decrease in cost of rubbish disposal if using pay as you throw system or if rubbish collections moved to fortnightly. Reduction in personal climate change footprint. For some household's potential time savings as they may choose to no longer home compost.	Low With the increase in the waste levy increasing the cost of landfilling waste and additional funding available to councils for waste minimisation, there may be no or low additional costs for households, provided a best practice kerbside collection is implemented.	Low – CBA has been commissioned.
Councils (Territorial Authorities)	Implementation costs - variable costs for Councils depending on whether they currently have a food scraps collection or not. Increased cost of service provision.	Reduction in cost of rubbish disposal. Decrease in ETS payments if they own a landfill. Can demonstrate that they are achieving emissions reductions targets. Diversion of waste from landfill.	Medium The increase in the Waste Minimisation levy is designed to offset the cost of new services to minimise waste. Impact across TA's will vary, but preferred option will require a reasonable level of investment (in new contracts or contract variations, bins and potentially processing facilities).	Low – CBA has been commissioned.
Waste Sector (Waste collectors, materials recovery facility operators, recycling and organic waste processors, landfill operators)	The costs will fall on different stakeholders. Income from providing rubbish collections may reduce and landfill operator's revenue will decline. Organic processors may need to upgrade existing facilities or build new facilities. Investment would be required in additional fleet. Would have to implement additional services in areas with marginal profits to be made because of smaller scale of services and distances to facilities. Many new processors may result in more soil amendment products which could impact prices.	The benefit will accrue to the parts of the waste sector which collect and process organic waste (currently some waste companies do, and some do not). Income from providing organic collections will increase. Income from processing organic waste and selling outputs will increase. Contamination from food in dry recycling bins will decrease.	Medium Waste sector participants provide multiple services (eg, they may own a composting facility or a recyclables processing plant and also provide collection services). The overall impact of the change is medium because the changes required rely heavily on waste sector's ability to deliver the changes, however they also benefit from higher revenue from delivering more services overall.	Low – CBA has been commissioned.
End User (compost/energy)		Large on-going increase in availability of soil amendment products will increase access across regions and lower prices.	High Significant increase in available material has a high positive impact for end users of the product.	Low – CBA has been commissioned.

<p>Environment</p>	<p>If diesel vehicles are used to collect food scraps and processing facilities are further away than landfill there may be an increase in transportation emissions.</p>	<p>Extended landfill life for existing landfills has longer term environmental benefits with less landfill sites and a smaller environmental footprint.</p> <p>The use of artificial fertilisers will decrease.</p> <p>Depending on the technology used for processing organics either increased soil carbon and reduction of nitrogen in freshwater streams or emissions free power generation.</p> <p>Reduction in emissions from landfill.</p> <p>If electric vehicles are used and processing facilities are closer than landfill, there may be a reduction in transport emissions.</p>	<p>High</p> <p>The environmental benefits of diverting organic waste from landfill are significant, and offsets any possible increase in transport-related emissions from an additional food scraps collection service.</p>	<p>High</p> <p>Easy to evidence environmental benefits of reduced volumes of waste to landfill.</p>
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Summary of household food scraps collections

Proposed implementation

The preferred option is Option 5 ‘Mandatory kerbside food scraps collections’ for towns with populations of 1,000 or more. We deem it highly unlikely that New Zealand will meet the ambitious 2030 targets proposed in the Waste Strategy through increased investment alone. The lack of processing infrastructure in New Zealand means that in some regions significant investment is required. Regulation provides certainty to business which will encourage greater private sector investment. It will also encourage councils to collaborate so they will benefit from economies of scale and avoid unnecessary duplication.

A performance standard in the current WMA could be used, or an equivalent mechanism in the revised WMA which will have more updated compliance, monitoring and enforcement consequences.

Councils with access to existing processing capacity could move first

We recommend that the performance standard be implemented in two phases. If requirements to collect food scraps are introduced, those councils with access to existing food scrap processing facilities could be required to move first and start collections by 2025. Regions where more capacity has to be built would have longer, until 2030, to start collections. This would allow time for the waste levy to increase providing a potential source of investment for regions requiring new infrastructure.

However, additional investment is also recommended to assist smaller councils to implement food scraps collections. Funding research into maximising household participation in existing schemes and developing a best practice toolkit for communications will also improve current performance, ensure that any future rollouts are based on best practice and avoid unnecessary duplication of effort.

The following facilities have been identified as currently having capacity and resource consent to accept kerbside collections of household food waste. Additional facilities may be identified through consultation feedback.

Table 10: Facilities with resource consent that can accept household food scraps

Region	Facility
Waikato	<ul style="list-style-type: none"> • Envirofert – Tuakau • Hampton Downs – Waikato • Mynoke Vermicomposting site – Taupō
Bay of Plenty	<ul style="list-style-type: none"> • Enviro NZ – new facility planned 2023 • Ecogas – Reporoa new facility planned 2022
Canterbury	<ul style="list-style-type: none"> • Living Earth – Christchurch • Timaru Eco Compost Facility – Timaru

For this analysis we suggested that councils within 150 kilometres of a facility have access. Based on the facilities identified in Table 10 above, the following councils have access and would have until 2025 to roll out a collection.

North Island: Auckland, Thames Coromandel District Council, Matamata-Piako District Council, South Waikato District Council, Waikato District Council, Waipa District Council and Waitomo District Council.

South Island: Mackenzie District Council, Waitaki District Council, Ashburton District Council and Hurunui District Council.

2.C. Reporting on private sector household collections

199. This section considers options to improve data reported about waste and materials collected from households by private sector kerbside services. The proposal is quite straightforward and has few feasible alternative options. The analysis in this section is consequently presented more briefly than for other proposals.
200. Kerbside dry recycling and food scrap collections are a foundational system for our circular economy. They are the main way that households return discarded materials to our economy. To improve kerbside collections we need to understand how well they are performing.
201. Reporting on kerbside collections is necessary to understand the current performance and the effectiveness of any changes, such as the proposals in this consultation. To know what proportion of household waste is diverted from landfill, it is necessary to know the total amount of waste collected by each of the kerbside services; recycling, food scraps, and rubbish collections, whether it is collected by a private company or a council.

Relevant objectives

202. Reporting itself does not contribute directly to the three objectives for improved kerbside collections, but without it any resulting impacts on the objectives cannot be measured.
203. Reporting on the waste collected from kerbside is necessary to:
 - know the amount of materials that households discard
 - understand how those materials are divided between dry recycling, food scraps, and rubbish collections and therefore to what extent we are moving to a more circular economy
 - allow comparisons of performance and which areas, systems, and interventions produce better results. This data will inform future decisions to reduce our emissions and make our economy more circular.

Current state and drivers for action

204. Councils are likely to continue to try and improve their kerbside collections but will be hampered by a lack of information. Currently most councils do not know how well households are recycling. New Zealand is unusual in that councils do not control all household collections and therefore do not have complete data. The private sector often provides collections for rubbish services (48 districts), and/or garden waste, and in some instances dry recyclables (13 districts). Private collections may be instead of, complement, or compete with council services.
205. Requirements for councils to report to the Ministry for the Environment on waste data, including on kerbside collections, have already been consulted on and are underway. These reporting requirements are planned to come into effect before 2023.⁵⁸
206. However, many private providers of household kerbside collections do not share their data with councils. This means councils do not know how well households are recycling and whether efforts to encourage people to reduce their waste are effective. It also makes the planning of future services and activities difficult for both local and central government.

⁵⁸ <https://environment.govt.nz/assets/publications/improving-the-availability-of-waste-data-cabinet-paper.pdf>

Options discarded

207. A voluntary option of asking private waste collectors to report on kerbside collections was discarded. Waste companies regard some of this data as commercially sensitive. Both central government and councils have found that information may not be timely, in sufficient detail, or to a standard that allows useful comparison.

Options to improve data reporting

208. Three options are analysed for improving kerbside collection data from private companies. These focus on the data about kerbside collections with no connection to council services. Proposals have already been put forward about reporting on council collections.⁵⁹
1. *Carrying on as we are now*: waste companies are not required to report on kerbside collections. Councils and central government continue to have incomplete data. Performance measurement and effective decision making are hindered.
 2. *Require private waste companies to report kerbside collection data to the Ministry for the Environment (preferred option)*: Regulate that private waste companies must report household kerbside collection data to the Ministry for the Environment. The Ministry intends to publish regional summary statistics (to protect commercially sensitive information) and allow each council to know how well the overall kerbside recycling in their region is performing.
 3. *Require councils to collect and report data from private waste companies*: If a requirement was placed on councils to collect the information, councils could use bylaws to licence waste collectors in their district and make data reporting a condition of operation. The requirement for councils could be made relatively quickly under current legislation, however, it would take some time for councils to implement bylaws. A few councils have implemented waste bylaws to gather this information, but most have not.

Analysis of the options

209. The status quo is undesirable. Baseline waste data is required for New Zealand to make progress moving to a low emissions circular economy. An immediate need is to measure the effectiveness of the proposals in this document.
210. The Waste Minimisation Act (WMA) allows for regulations to be made to require any class of person to provide information in order to assess waste minimisation performance and decrease waste disposal. Regulations could be enacted as early as 2023. For Option two we propose private company reporting would commence from mid-2024 to allow time for companies to prepare. Option three requires more time for councils to create bylaws and reporting is probably not practical before mid-2026 at the earliest.
211. Both options two and three would see the required data collected and reported to the Ministry for the Environment. However, option two could be operationalised faster and is likely to have much lower administration costs than option three.
212. Option three would be administratively costly for both councils and private waste companies. Most of the 67 local councils would have to make bylaws and licence any waste collectors wanting to operate in their district. Similarly waste companies would need to be licensed in multiple districts and apply to be licenced, if they wanted to offer services in a new district. The waste sector is dominated by a few large companies which provide services to multiple councils with a larger number of smaller companies

⁵⁹ <https://environment.govt.nz/assets/publications/improving-the-availability-of-waste-data-cabinet-paper.pdf>

which may provide a service to just one council. The estimated number of regulated parties is 28.

Marginal costs and benefits of regulating private waste companies to report on household kerbside collections

Table 11	Cost	Benefit	Net impact	Evidence Certainty
Affected groups	Additional impacts of the preferred option compared to taking no action			
Waste Sector (specifically waste collection companies)	Anticipated to be low - Data is likely to already be collected, but publication may reduce commercial value. Increased reporting and compliance costs.	Low - May be able to benchmark their own performance against others and improve services.	Low	Medium
Central Government	Low - Set up and administer data system, analysis, publishing, and compliance.	High – Allows measurement of best practice, circularity, and effectiveness of interventions.	High	High
Councils (Territorial Authorities)	No significant costs.	Medium – Will be able to understand performance of kerbside collections and can measure impacts of changes.	Medium	High
Householders	No significant costs.	Able to see performance of local collections and how these compare nationally.	Low More informed	High
End Users (packaging manufacturers, compost users)	No significant costs.	Able to see local recovery rates for different packaging materials and make locally effective choices.	Low More informed	High
Environment	No significant costs.	Over time improved kerbside services will reduce emissions and resource related environmental impacts.	High (indirect)	High

Summary reporting on private kerbside collections

The preferred option is to regulate waste companies directly to report on kerbside collections data. This option provides the information required at the least cost.

2.D. Setting performance targets for councils

213. This section considers options to encourage councils to adopt best practices to ensure their kerbside collections are as effective as they can be at collecting materials for recycling and composting or digestion. The preferred option is a '*Mandatory minimum diversion target and a high-performance target*' encourage adoption of best practice collections.

Relevant objectives

214. This proposal is likely to affect all three objectives below, as it provides a framework that encourages the adoption of the other proposals, even if they do not proceed following this consultation.

- increase public engagement and confidence in kerbside dry recycling and food scraps collections.

- reduce contamination and increase the quality of materials collected for dry recycling and food scrap recycling.
- increase the quantity of targeted materials placed in kerbside dry recycling and food scraps collections rather than in the rubbish.

Current state and drivers for action

215. Best practice collections cover the three parameters below, all of which are affected by communications, kerbside service design, frequency and collection methods:
- public engagement and confidence in the kerbside services
 - the quality of the materials collected
 - the relative quantity of materials collected.
216. Improving kerbside performance will contribute to the Waste Strategy and ERP 2030 targets already outlined. The speed of improvement is important, especially for the biogenic methane target as even modest diversion earlier on is likely to have a larger emission reduction impact than greater diversion later.⁶⁰

Reporting on kerbside collections performance

217. Most councils do not know how well kerbside collections are performing due to the large number of services provided by the private sector. A few councils have implemented waste bylaws to gather this information, but most have not.
218. Requirements for councils to report to the Ministry for the Environment on waste data, including on kerbside collections, have already been consulted on. These reporting requirements are planned to come into effect before 2023.⁶¹ To support the performance target proposals the Ministry could publish this information, so the relative performance of kerbside collections is known and publicly available.

What is achievable?

219. As an example, Waitomo District Council is one of the few councils with complete information on household waste. They own their landfill and only one company collects waste and recycling under contract to the council. Waitomo has user-pays rubbish bags and each household has one crate for kerbside recycling with paper and cardboard collected separately.
220. Waitomo currently diverts 46 per cent of materials from kerbside and could make further improvements. If food scraps were also collected, their diversion rate could increase up to 67 per cent. If they started collecting plastics #5, and households were clearer on what could be recycled, they could reach over 70 per cent diversion.

What are best practice collection models?

221. Internationally a variety of models are deemed best practice. In Australia, a three-bin system of comingled recycling, food scraps and garden waste is promoted. Wales encourages the use of a trolli-block bin (stacked crates on a wheeled base) with mandatory source separation of key waste streams.
222. In New Zealand, a crate system where all recyclables are collected source separated has been identified as the most effective means of achieving high quality recyclables.⁶² However, the report was not asked to consider what system would divert the most amount of material from landfill or would be most suitable for New Zealand's

⁶⁰ Organic waste continues to release methane for many decades after it has been landfilled. The cumulative emissions from landfilled waste early in the period is difficult to offset even with large reductions later on.

⁶¹ <https://environment.govt.nz/assets/publications/improving-the-availability-of-waste-data-cabinet-paper.pdf>

⁶² [Recommendations for standardisation of kerbside collections in Aotearoa | Ministry for the Environment](#)

topography. Therefore, it is currently unclear what best practice looks like and whether there are different models for achieving it.

Shared best practice research and resources lowers costs for councils

223. Making changes to collections incurs costs such as research, assessment and consultation on options, designing and testing communications, education and behaviour change campaigns, changes to bins, vehicles, and contracts. Without the benefits of shared research and resources, or offsetting investment from private companies or central government, individual councils will face higher costs of change, and this will continue to be a barrier to implementing best practice and more effective collections.

A potential Container Return Scheme (CRS) is likely to affect best practice

224. The possible implementation of a CRS, covering glass, metal, and plastic beverage containers, may have a significant impact on the quantity of material collected at kerbside. Access to container return locations and the size of the deposit can affect the amount of recycling received through a CRS as opposed to kerbside.

225. Current systems which are deemed to be best practice at kerbside may no longer be optimal under a CRS. It may be prudent to monitor the impact of a CRS scheme for at least one year to determine what the implications are for kerbside best practice. Discussion of the options below accounts for this delay in any requirements for action.

Options discarded

226. No feasible options were knowingly discarded.

Options considered to encourage best practice collections

227. Five options are analysed for implementing best practice collections. They are set out from least intervention to most.

1. *Carry on as we are now (the counterfactual)*. Councils have incomplete data on how well their kerbside collections perform or guidance about best practice, so it can be difficult to evaluate performance.
2. *Guidance, technical support, and investment*. If the proposal 2C to mandate reporting is implemented, councils will know how well they are performing compared to other councils. Additional guidance and investment may assist those who are then motivated to improve.
3. *Voluntary target for diversion of materials from kerbside collections*. Develop a targeted level of diversion for councils to achieve from household kerbside collections. For example, aim for at least half of household waste collected at kerbside to be diverted from landfill via recycling or composting/digestion.
4. *Mandatory minimum diversion target and a high-performance target*. Set a minimum diversion target to be achieved by household kerbside collections. In addition, set a high-performance target to encourage councils to continue to optimise their performance.
5. *Mandate a system for collecting rubbish and recycling*. Research into improving kerbside performance recommended a specific system for all councils to use.⁶³ This included collecting dry recyclables weekly in three 45 litre crates, a food scraps collection with an optional green waste collection and collecting rubbish fortnightly with the option of either a wheeled bin or bag.

⁶³[Recommendations for standardisation of kerbside collections in Aotearoa | Ministry for the Environment](#)

Option 1 – Carrying on as we are now (the counterfactual)

228. *Option:* Councils continue to make choices about kerbside services, most with incomplete information about performance or best practice guidance.
229. *Likely effect:* Services may not be designed to be most effective due to a lack of information. Choices are likely to be influenced by factors other than performance.
230. *Likely impact:* Ad hoc changes may or may not improve individual council's performance or New Zealand's overall performance or objectives for our kerbside recycling system.

Option 2 – Guidance, technical support, and investment (in addition to mandatory reporting)

231. *Option:* Central government facilitates the development of national guidance for best practices in kerbside collections, and shared communications and collateral. Best practice guidance includes information on the range of performance across New Zealand, international examples, and indicative effectiveness of specific practices. Attracting additional investment supports councils to move to best practices.
232. *Likely effect:* With access to investment and information about best practice, some councils will make changes to improve their performance. However, with no timeframes change may be slow and patchy.
233. *Likely impact:* Some improvements to individual council's performance and a small lifting of New Zealand's aggregate performance out to 2030.

Option 3 – Voluntary target for diversion of materials from kerbside collections (in addition to technical support, investment, and mandatory reporting)

234. *Option:* Develop a voluntary performance target for household kerbside collections. For example 'By 2030, 50 per cent of household waste placed at kerbside is diverted from landfill via recycling or composting/digestion.'
235. *Likely effect:* A voluntary target may motivate more councils to improve performance but may not motivate the laggards. Additional investment, guidance and support would still be useful but, if a CRS is introduced, it may be prudent to observe the impact on kerbside materials and potentially best practice before support is rolled out.
236. *Likely impact:* More councils are likely to make improvements when a target and timeframes are specified, even if they are voluntary. A small to moderate increase in New Zealand's overall performance is likely.

Option 4 – Mandatory minimum diversion rate and a high-performance target (preferred option) (in addition to technical support, investment, and mandatory reporting)

237. *Option:* Set a minimum performance target for council kerbside collections and a voluntary high-performance target. The targets specify a percentage of total household waste placed at kerbside to be diverted from landfill (ie, to recycling or composting/digestion).
238. A minimum performance target of 50 per cent by 2030 is proposed, and in addition a high-performance target of 70 per cent by 2030. These targets are ambitious but are aligned with the proposed targets in the New Zealand Waste Strategy.
239. *Likely effect:* Despite data uncertainties, it is likely that most councils would need to make changes to achieve the minimum target of 50 per cent diversion. New Zealand's average diversion is estimated to be 35 per cent. The average composition of New Zealand household kerbside waste is roughly 40 per cent food scraps, 30 per cent recyclable materials, and 30 per cent other waste. To achieve 50 per cent diversion many councils may find it necessary to provide both a kerbside dry recycling and a food scraps collection.

240. *Likely impact:* A significant increase in materials diverted to productive circular systems is expected. If most councils implement measures to meet the minimum 50 per cent diversion by 2030 and some councils achieve better, New Zealand's overall performance will be significantly lifted from the current 35 per cent.
241. *Mechanism and timing:* A minimum performance and a high-performance target could be set in a performance standard under the current WMA. A minimum performance target is more effective if there are appropriate consequences if the target is not met. Currently, the consequences in the existing WMA are limited to withholding levy payments. It may be sensible to wait and make regulation under a revised Act which is anticipated to provide a more appropriate range of monitoring, compliance and enforcement tools.

Option 5 – Mandate a system for collecting rubbish and recycling

(in addition to technical support, investment, and mandatory reporting)

242. *Option:* Require all councils to use a standard system to collect household kerbside recycling. For example, a three-crate system has been recommended to maximise the quality of recycling.⁶⁴
243. *Likely effect:* National messaging about how to recycle could be significantly simplified and made the same throughout New Zealand. Councils would be collecting the same materials and we could expect an increase in dry recycling captured as explored in Proposal 1. If the standard system also included food scraps, we could expect a significant increase in material diverted to composting and digestion as explored in Proposal 2, option four, above.
244. However, a system for collecting recycling that works well in a densely populated urban district may not work as well in a dispersed rural district, or where there are other differences between districts.
245. *Likely impact:* A significant increase in materials diverted to productive circular systems is expected, especially if food scraps are collected. However, a standard collection system is likely to be more expensive, less effective and possibly not feasible for some councils, reducing the net impact.

Best practice collections encourage the adoption of other proposals in this document

246. Only a few costs and benefits are specific to implementing best practice, for example encouraging 'pay as you throw' fortnightly rubbish collections (which encourages increased use of recycling and food scraps collections). The more significant costs and benefits are related to how well the options encourage the adoption of other proposals. For example, a minimum baseline for kerbside performance is likely to encourage adoption of widespread food scraps collections to reach that baseline. The costs and benefits of widespread food scraps collections are shown in both this proposal and in *2.B. Increasing food scraps diversion from landfill*.

⁶⁴ [Recommendations for standardisation of kerbside collections in Aotearoa | Ministry for the Environment](#)

How do the options for the best practice collections proposal compare to the counterfactual?

Table 12 Best Practice Collections	Option 1 <i>Counterfactual</i>	Option 2 Guidance, technical support and investment	Option 3 Voluntary performance targets	Option 4 Mandatory minimum and voluntary high-performance target	Option 5 Mandate a system for collecting rubbish and recycling
	<i>Counterfactual</i>	<i>Change from counterfactual</i>			
Effectiveness <i>Criteria: How well are councils encouraged to improve performance in terms of recycling and foods scraps collected?</i>	0 Data is limited on current effectiveness of individual council collections, but national estimates suggest performance is variable and, in many cases, low.	+	+	++	++
Timeliness <i>Criteria: How soon would councils be able to start making changes and how long until most councils are likely to have implemented best practice collections?</i>	n/a	+	+	++	-
Cost <i>Criteria: considers the short-term cost of making changes. The longer-term benefits (how much additional material is diverted) are captured under the effectiveness.</i>	0 No costs, but no additional savings.	-	-	--	--
Overall Assessment	0 Unsatisfactory – will not achieve desired outcomes for New Zealand.	(1) Medium Partially achieves desired outcomes for New Zealand but not consistently.	(1) Medium Partially achieves desired outcomes for New Zealand but not consistently.	(2) High Preferred option. Mostly achieves desired outcomes in a timely manner.	(-1) Low Completely achieves desired outcomes but takes the longest and at greatest cost.
Key for qualitative judgements:		- worse than the counterfactual		++ much better than the counterfactual	
0 about the same as the counterfactual		-- much worse than counterfactual		+ better than the counterfactual	

Note: mandatory reporting is assumed for all options except the counterfactual. Reporting is required to determine the effectiveness of any options implemented. Most options also include targets or baseline performance measures which require reporting to see if they are achieved.

What are the marginal costs and benefits of the preferred option (Option 4 - Minimum and high-performance targets)?

Table 13	Cost	Benefit	Net impact	Evidence Certainty
Affected groups	Additional impacts of the preferred option compared to taking no action			
Households	<p>Higher ongoing operational costs of additional services are needed to meet recycling targets, passed on to householders through rates or PAYT/user charges.</p> <p>Note: assumes capital costs are not funded from rates or user charges.</p>	<p>Wider recycling options available will reduce cost of residual rubbish.</p> <p>Potential for higher customer satisfaction with improved/clearer services.</p>	<p>Low</p> <p>Shifting the mix between rubbish and recycling so unlikely to have a significant net positive or negative financial impact for householders.</p>	<p>Low – CBA has been commissioned.</p>
Councils (Territorial Authorities)	<p>Costs will be variable depending how significantly a council needs to improve their performance. Most are likely to need to introduce a food scraps collection.</p> <p>To meet the minimum performance target some councils will need to invest in bins (directly), or collection vehicles and changes at their MRFs (through their contractors).</p>	<p>Leverages off existing investments in collection services and receptacles.</p> <p>Increase in revenue stream for recyclables due to larger volumes and lower contamination rates.</p> <p>Economies of scale with all councils required to deliver to the same performance standards and therefore requiring access to facilities with similar characteristics.</p>	<p>Medium</p> <p>Impact across councils will vary, but the preferred option will require a reasonable level of investment (in new contracts or contract variations, receptacles and potentially processing facilities).</p>	<p>Low – CBA has been commissioned.</p>
Waste Sector	<p>Require investment in additional fleet and changes to processing facilities (eg, MRFs) to provide improved kerbside performance.</p> <p>Where private kerbside services are provided, would also have to meet minimum standards.</p> <p>Would have to implement additional services in areas with marginal profits to be made because of smaller scale of services.</p>	<p>Introduction of further services in areas where minimum binding targets are not being achieved widens service offerings.</p> <p>Higher quality and volume of material to be able to sell to relevant end markets.</p>	<p>Medium</p> <p>Waste sector participants provide multiple services (eg, they may own a composting or recyclables processing facility and also provide collection services).</p> <p>The overall impact of the change is medium because the changes required rely heavily on waste sector's ability to deliver the changes, however they also benefit from higher revenue from delivering more services overall.</p>	<p>Low – CBA has been commissioned.</p>
End Users (Packaging manufacturers, specifiers or compost and digestate users)	<p>No direct costs.</p>	<p>Minimum performance targets are likely to increase food scraps collections and increase the availability of compost and digestate. Best practice collections may also increase the widespread acceptance of recyclability labelling.</p> <p>Increased marketing opportunities through the promotion of recycled packaging and compost.</p>	<p>Low</p> <p>Impact for end users arises more from a change to a standardised list of materials than from the setting of performance targets.</p>	<p>Low – CBA has been commissioned.</p>

Environment	<p>Likelihood of increased vehicle movements with an increase of collections of different types of material over a wider range of areas with greater distances to processing facilities.</p>	<p>Reduced greenhouse gas emissions from landfill as a result of diversion of organics.</p> <p>More material collected that then remains in circulation, avoiding the need for new raw material (ie, supporting a circular economy).</p> <p>Extended landfill life for existing landfills has longer term environmental benefits with less landfill sites and a smaller environmental footprint.</p> <p>Changes to receptacles, collection fleet or processing facilities only need to be made where Councils are not meeting the standards, otherwise existing resources can continue to be used.</p>	<p>High</p> <p>The environmental benefits of diverting recyclables and organics from landfill are high, and offset the increased transport-related emissions from additional collection services.</p>	<p>High</p> <p>Easy to evidence environmental benefits of reduced volumes of waste to landfill.</p>
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Summary of performance targets

The proposal to increase the adoption of best practices for kerbside collections aims to lift the effectiveness of collections and ensure a minimum performance is achieved.

Option 4 'A mandatory minimum diversion rate and a high-performance target' is identified as the preferred option. It provides a strong incentive for improved collections, ensures speedy change, and allows councils choice about how to achieve the performance targets.

2.E. Options to reduce glass contamination of other recyclables

247. This section considers options to reduce glass contamination of other dry recycling materials. This proposal could be affected by decisions about a proposed CRS which is being consulted on at the same time. A CRS could affect the amount of glass and other beverage containers collected through kerbside recycling. For this reason, this proposal is more of an open question with no preferred option identified yet.

Relevant objectives

248. This proposal's primary objective is to increase the quality of materials collected:

- reduce contamination and increase the quality of materials collected for dry recycling.

Current state and drivers for action

How we collect glass for recycling affects the quality of other materials

249. A comingled collection is where glass is collected mixed with other dry recycling. In a comingled system, some glass will be broken and contaminate the other materials. Small pieces of glass, known as glass fines, are difficult to separate from other recycling especially when sticky from food and drink residues. The contamination adds expense, reduces the quality and price of sorted materials and may lead to a lower grade of recycled material.

250. Glass fines are particularly problematic for paper and cardboard recycling. New Zealand's pulp mills are not equipped to remove glass fines. Any paper and cardboard with glass contamination is exported for recycling, because it requires extra processing as it is a low-value commodity. In recent years, price fluctuations for low value paper and cardboard exports affected the viability of our resource recovery sector and recycling systems.⁶⁵ About half of New Zealand's paper and cardboard collected for recycling is exported, although this also reflects limited additional onshore capacity in our pulp mills for recycled input.

251. How glass is collected impacts on the quality and cost effectiveness of our recycling system.⁶⁶ Comingled collections introduce glass fines to other materials. A separate glass crate colour-sorted at kerbside allows bottle glass to be easily recycled back into bottles and prevents glass fines impacting other materials. Separate paper and

⁶⁵ National Resource Recovery Taskforce [Situational Analysis Report 2018](#)

⁶⁶ Material recovery facility operators report the additional wear and tear on machinery from comingled glass adds 15 per cent to 50 per cent to annual maintenance costs. [Situational Analysis Report 2018](#) pg 47

cardboard collection is another alternative solution as it removes the material most detrimentally affected by glass fines.

252. At present most of the 59 council recycling services separate glass before it causes problems. About two thirds of councils collect glass separately⁶⁷, a further nine separate glass from comingled crates at the truck. A few councils also collect paper and cardboard separately. Ten councils do not collect glass separately from paper and cardboard. They use a comingled wheeled bin which is emptied into the truck unsorted. Two of these councils cover large urban areas, Auckland and Christchurch, and collect a significant proportion (around two thirds) of New Zealand's household recycling. Christchurch City Council is currently reviewing its collection services including whether to collect glass separately.

How we collect glass for recycling affects the amount of glass we can recycle back into glass

253. After reuse or refilling, the best outcome for glass bottles and jars is to make them back into bottles and jars. New Zealand has one glass bottle manufacturing plant in Auckland. These New Zealand-made bottles have a high recycled content, on average around 67 per cent, and the plant is near capacity for processing recovered glass. It currently recycles less than half of the amount of glass sold as beverage containers in New Zealand each year. The remaining glass beverage containers as well as all the glass jar and non-beverage containers are an excess supply with limited alternative onshore market opportunities.
254. The existing glass furnace capacity could be made to go further, and more glass recycled into new bottles if kerbside quality were improved. However, the gains would be limited, and if no other broader system changes were made, the furnace would still not be able to take all of New Zealand's glass. If all councils produced high quality glass the market would still be in an oversupply situation as it is today, albeit, to a lesser degree.
255. Several practical issues limit how much more recycled content can be included in New Zealand-made bottles. Increasing the quality of the glass collected helps overcome these barriers to the point where the current furnace capacity ceiling of around 120,000 tonnes of recycled cullet can be lifted. This would allow for more bottle-to-bottle recycling. Some of the issues include:
- glass is heavy and locations further from Auckland have higher transport costs. Improving quality increases value making longer transport more viable.
 - glass has to be sorted and processed through a beneficiation plant before it is ready to be added into the mix for new bottles. The benefaction plant in Auckland is already run at capacity. However, low-quality glass has to be run through the plant slowly to sort to the quality required. If more glass was collected in high quality streams, more glass could be run through the plant for recycling into bottles.
 - glass bottles are made in a range of colours. Darker colours like brown and green can have quite high levels of recycled content as small variations in the colour of the recycled glass can be managed. Clear glass, known as flint in the industry, has lower levels of recycled glass as impurities leading to off colours are much more noticeable. Higher quality colour sorted glass allows for greater quantities of recycled glass to be added to the new bottles without adversely affecting colour.

⁶⁷ Some collection contracts were out for tender at the time of writing but under the expected outcome, 39 of the 59 councils offering kerbside dry recycling services provide separate collection of glass. Nine councils collect dry recycling in a comingled crate. It is assumed that the glass is hand sorted at kerbside achieving the same outcome, that glass is separated from the other dry recycling before it is crushed in the truck.

256. Increasing the quantity of high-quality glass collected could increase the amount of glass used for bottle-to-bottle recycling. Glass quality is affected by the collection method:
- Glass that is colour sorted before the bottles and jars get broken produces the highest quality glass.
 - Glass collected separately but not colour sorted produces medium quality glass.
 - Glass collected comingled with dry recyclables produces the lowest quality glass.
257. Even if all glass were best quality, over 40 per cent of glass containers would still have to find an alternative market or disposal option, which can come at a cost.
258. With limited furnace capacity, lower quality glass is less likely to be transported to Auckland to be made back into bottles. Instead it may be stockpiled, landfilled, or crushed into aggregate or filter material, which are less circular and less desirable uses.

Impact of Container Return Scheme (CRS)

259. The introduction of a CRS is being consulted on alongside improvements to kerbside collections as a decision about one system will affect the other. A CRS would simultaneously significantly improve both the quality and quantity of glass recovered, while also reducing the amount of glass in kerbside, and the associated contamination from glass fines in kerbside dry recycling collections.
260. The proposed CRS is likely to divert a substantial amount of beverage glass from kerbside collections. Overseas experience suggests that 10-20 per cent of glass beverage containers are likely to be left in kerbside collections, depending on the value of the deposit and ease of access to container return facilities. Additionally, glass jars and other non-beverage bottles (eg, olive oil) will still be collected at kerbside. The average household is estimated to use only 70 glass jars/non beverage glass bottles per annum. Taking into account reduced beverage container volume and relatively few glass jars/non-beverage containers, it is likely many Councils could move to a reduced collection frequency for kerbside glass (assuming glass is separated) providing significant savings for councils.⁶⁸
261. Some jurisdictions, such as British Columbia, Canada, continue to collect glass separately even with a successful CRS as the improvements to quality for all recyclable materials are still significant.

Health, safety and collection efficiency

262. Most glass collected separately is collected in crates, though sometimes a wheeled bin is provided. Some councils have concerns about collecting glass in crates relating to the health and safety of collection workers and collection cost effectiveness.
263. Wheeled bins are usually emptied by mechanical lifters on the collection trucks. Crates and boxes are usually lifted by hand. The risk of injury due to manual handling of crates has persuaded some councils to move to wheeled bins.
264. The Ministry for the Environment funded an independent health and safety review to investigate whether kerbside systems that require greater manual handling such as collecting materials separately in crates and boxes could be undertaken safely.⁶⁹ The

⁶⁸ Yates S, 2019. Rethinking Rubbish and Recycling – bin audits. Prepared for the WasteMINZ TAO Forum by Sunshine Yates Consulting. Auckland: WasteMINZ

⁶⁹ The Ministry funded an independent health and safety review to determine whether kerbside systems that require greater manual handling such as collecting materials separately in crates and boxes could be undertaken safely. The review found that provided standard industry safeguards are in place, any risks

review found that provided standard industry safeguards are in place, risks associated with manual handling at kerbside can be adequately managed.

265. Another factor is the greater capacity of wheeled bins and faster collection. Crates, as they are hand lifted and often colour sorted at kerbside, take longer but produce a higher quality material for recycling.

Options considered and discarded

266. No feasible options were knowingly discarded.

Options considered to reduce glass contamination

267. Five options to reduce the impact of broken glass on the quality of recycling are analysed. They are set out from least intervention to most.

1. *The counterfactual or carrying on as we are now.* Some councils continue to collect glass and paper and cardboard in comingled recycling bins.
2. *Best practice guidance and increased investment.* Develop best practice guidance and seek additional funding from private investment, or central government to incentivise councils to move to separating out either glass or paper and cardboard.

Option 2 represents the minimum additional intervention from central government. Each further option would be in addition to increased investment and technical support. These are required for councils to implement changes faster and more effectively.

3. *Either glass or paper and cardboard must be collected separately.* Councils and private collectors have the choice as to which material to separate.
4. *Glass is collected separately from other dry recycling.* Councils and private collectors could be required to collect glass separately from other recycling. Either by providing a separate crate or bin or by hand sorting a comingled crate at kerbside.
5. *Paper and cardboard are collected separately.* Collectors could be required to separate paper/cardboard from other recycling.

Option 1 – Carrying on as we are now (the counterfactual)

268. *Option:* Councils continue to decide on an individual basis whether to collect materials comingled or separately.

269. *Likely effect:* Over the last fifteen years the number of councils collecting glass separately, or sorting glass, at kerbside has increased. Only eight councils now collect glass together with paper and cardboard in a comingled wheeled bin. Smaller councils who changed to a separated system were often supported by the glass packaging sector through Glass Packaging Forum grants.⁷⁰ For medium sized councils the change has also at times been supported by grants from the Waste Minimisation Fund.

270. The introduction, or not, of a CRS will have the greatest impact on the counterfactual. If a CRS is not introduced, it is possible that some smaller councils would opt to collect glass separately as they reviewed and renewed their services. One larger council, Christchurch, is also considering introducing a separate glass collection.⁷¹ However, the proposed CRS could significantly reduce the amount of glass collected in kerbside.

associated with manual handling at kerbside can be adequately managed. The review can be read in full on the Ministry for the Environment website.

⁷⁰ [Glass Packaging Forum - The Packaging Forum](#)

⁷¹ <https://www.mnz.co.nz/news/national/429934/christchurch-council-floats-separate-glass-recycling-collection>

Therefore, it is unlikely that councils will make changes to their glass collection until 2024 when the impact of a CRS is known, if one is introduced.

271. Other considerations such as health and safety, collection efficiency, and sunk investments in sorting infrastructure may still limit councils' willingness to change to separate glass collections.
272. *Likely impact:* Uncertain. A CRS is likely to significantly reduce the amount of glass collected in comingled recycling bins, but it is unclear if glass fines would be reduced to a level where they no longer cause issues for other recyclables. Where additional separate collections are implemented improvements to recyclable material quality may be significant for the individual councils but is likely to be small for the New Zealand recycling system as a whole.

Option 2 – Best practice guidance and increased incentives

273. *Option:* Develop best practice guidance and technical support for separate collection of glass or paper and cardboard. Technical support would be more effective if combined with financial assistance to councils for the costs of changing collections. Central government could explore additional sources of funding (whether this be from private companies, industry bodies, or central government funds) to increase incentives to separate glass or paper and cardboard.
274. *Likely effect:* The cost of change is a key barrier to changing kerbside collections. Grants have been effective at inducing some councils to collect glass separately, but the amount of funding has not been enough to cover the costs for medium and large councils. If increased incentives are secured, it could be expected to increase the uptake of separate glass collections. Some small to medium councils may opt to collect glass separately.
275. Other considerations such as the limited furnace capacity (onshore market demand) may still limit councils' willingness to separate glass collections.
276. *Likely impact:* Uncertain but likely to be greater than Option 1. The impact of glass fines on the quality of recyclable materials is likely to be affected by the introduction, or not, of a CRS. Where additional separate collections are implemented improvements to recyclable material quality may be significant for the individual councils but is likely to be small for the New Zealand recycling system as a whole.

Option 3 – Either glass or paper and cardboard must be collected separately (in addition to best practice guidance and increased incentives)

277. *Option:* Regulate that kerbside collections must collect either glass or paper and cardboard separately, but councils have the choice of which to separate.
278. *Likely effect:* Most councils already collect glass separately or separate the glass from other recyclables before it gets broken. A few councils also collect paper and cardboard separately, but this is typically in addition to separate glass collection. Ten councils collect glass and paper and cardboard together in a comingled wheeled bin and would have to provide a separate container for one of these materials. Three councils which provide kerbside recycling services, but do not currently collect glass would need to provide a separate container for either glass or paper and cardboard.
279. Collections across New Zealand are likely to be largely consistent with a majority choosing to separate glass. However, councils retain the ability to choose to separate the material they believe will work best for their collection system and available markets. For councils who choose to separate out paper and cardboard, glass fines could still have an impact on other recyclable materials.
280. *Likely impact:* Uncertain but could be high if glass fines remain a problem, either in the absence of a CRS or if too many glass fines remain even after a CRS is introduced. This option would be effective at preventing broken glass from affecting the quality of

paper and cardboard improving the value of this resource and providing more end market options and increasing the resilience of our recycling system.

Option 4 – Glass is collected separately from other dry recycling

(in addition to best practice guidance and increased incentives)

281. **Option:** Regulate that council and private kerbside collections must collect glass separately.
282. **Likely effect:** 48 of the 59 council kerbside dry recycling services already collect glass separately or separate the glass from other recyclables before it gets broken. Ten councils use comingled wheeled bins (including New Zealand's largest two councils, which between them, collect about two thirds of national kerbside recycling) or are not collecting glass at all and would need to change. If an effective CRS is introduced and significantly reduces glass volumes, crates may be more appropriate than larger wheeled bins in a separated glass scenario.
283. **Likely impact:** The scale of the impact is uncertain as it depends on whether a CRS is introduced and how effective that CRS is at diverting glass from kerbside. Separate glass collections at kerbside would ensure the other dry recycling materials are free from glass fines, lifting the quality and value of these materials. This will provide greater resilience to the recycling system, as there are greater processing options (including onshore), markets, and demand for higher quality streams. This is particularly the case for paper and cardboard.
284. Separate glass collections will also improve the quality of our glass streams for recycling, especially if some councils also choose to colour sort the glass. Better quality glass may allow for a limited increase in the amount of glass used for bottle-to-bottle recycling and reduce further the environmental footprint of bottles made in New Zealand.

Option 5 – Paper and cardboard are collect separately

(in addition to best practice guidance and increased incentives)

285. **Option:** Regulate that council kerbside collections must collect paper and cardboard separately.
286. **Likely effect:** All councils except four would be required to change. Paper and cardboard is more demanding to collect separately. Unlike glass, paper and cardboard are light and unless contained in a wheeled bin or bag, may blow away if not adequately secured at kerbside. They should also be kept dry. Wet paper and cardboard can reduce the value for recycling. Collection options include a wheeled bin, a crate with or without a net or lid, in a plastic bag, or boxed or bundled next to other recycling.
287. **Likely impact:** Paper and cardboard quantity may increase. Separate collection has been shown to increase quantities collected. However quality, while free of glass fines, may be affected, if effective methods for keeping the material dry and secure are not adopted.

How do the glass contamination options compare to the counterfactual?

At this stage, the uncertainty around the impacts of a CRS makes evaluation of the options difficult. It is recommended to re-evaluate the options when it becomes clear how much glass remains in the kerbside dry recycling collections.

However, should a CRS not be introduced, or if large amounts of glass remained in kerbside dry recycling collections, it would be useful to have analysis and consultation about the next best option. The options are evaluated below as if no CRS was introduced. A note is included, but not scored to indicate the likely impact on the options if an effective CRS is introduced.

Table 14 glass contamination of other recyclables	Option 1 <i>Counterfactual</i>	Option 2 Guidance and incentives to separate glass or paper and cardboard	Option 3 Either glass or paper and cardboard collected separately	Option 4 Glass collected separately from other dry recycling	Option 5 Paper and cardboard collected separately
	<i>Counterfactual</i>	<i>Change from counterfactual</i>			
Effectiveness <i>Criteria</i> How well does the option reduce the impact of broken glass, shards and fines on paper and cardboard and other recyclables?	0 Adoption of separate glass collections is likely to continue but is slow and uncertain. Glass fines contamination in comingled collections is likely to continue. This impacts on the quality of the other materials and limits bottle to bottle glass recycling in New Zealand.	0 Uptake may provide incremental improvement. Some small and medium councils are likely to change to separate glass containers eliminating glass fines contamination for those councils. Inconsistent collection methods around the country may confuse households and tourists.	+ This would eliminate the contamination by glass for paper and cardboard. Glass may continue to impact other material streams (where it is undesirable but less problematic). Potentially inconsistent collection methods may confuse households and tourists.	+ This would eliminate the contamination of glass for all recyclables. Improves the quality of glass collected. Furnace capacity issues remain so may involve additional cost for limited additional benefit.	+ This would eliminate the contamination of glass for paper and cardboard. Glass would continue to impact other material streams (where it is undesirable but less problematic and may have been significantly reduced if CRS is introduced).
Timeliness <i>Criteria</i> How soon would councils or recycling facilities be able to put in place the changes they need to deliver the intended outcomes?	0 A few councils may choose to separate glass as they review their collections between now and 2030. However, the speed of change is expected to be very slow.	+ Due to voluntary uptake change may be slow even if incentives are available quickly. It is unlikely that consistent separation would be achieved throughout the country by 2030.	++ Medium timeframe to implement as 10-19 councils may need to change their collections (including large metro councils, Auckland and Christchurch).	++ Medium timeframe to implement as 10-19 councils may need to change their collections (including large metro councils, Auckland and Christchurch).	+ Medium-long timeframe to implement due to the larger number of councils (55-63) which would need to change their collections.

<p>Cost Criteria -Cost to implement this option relative to the counterfactual Considering - the cost of purchasing equipment and bins - savings from a reduction in contamination and improved access to markets - additional income from increased quantity</p>	<p>0 Glass fine contamination of paper and cardboard continues and increases the cost of processing recyclables and decreases access to profitable end markets.</p>	<p>- Costs vary with council uptake and scale of change. Reduced contamination saves on processing costs.</p>	<p>- 48 councils already separate glass before or at kerbside. The remaining councils would need to purchase bins and modify or purchase new collection vehicles. Reduced contamination saves on processing costs.</p>	<p>- 48 councils already separate glass before or at kerbside. The remaining councils would need to purchase bins and modify or purchase new collection vehicles. Reduced contamination saves on processing costs.</p>	<p>-- Only 4 councils collect paper and cardboard separately. The remaining councils would need to purchase collection containers and reconfigure existing collection vehicles or purchase new ones. Reduced contamination saves on processing costs.</p>
<p>Overall Assessment</p>	<p>(0) Low May partially achieve desired outcomes for New Zealand if a CRS is implemented</p>	<p>(1) Low Partially achieves desired outcomes for New Zealand at medium cost</p>	<p>(2) Medium Mostly achieves desired outcomes for New Zealand at medium cost</p>	<p>(2) Medium Achieves desired outcomes for New Zealand but at greater cost than Option 3</p>	<p>(0) Low Partially achieves desired outcomes for New Zealand at a significant cost</p>
<p>Note on potential impact if an effective CRS is introduced</p>	<p>If a CRS removed most glass from kerbside, both the costs and the benefits of change would decrease. Glass fine contamination of other recyclables would reduce, but still limit end markets for comingled paper and cardboard. Separation would still improve paper and cardboard quality, value, and potential markets, increasing the resilience of our recycling system. The CRS would be expected to provide sufficient high quality glass for maximum New Zealand bottle to bottle recycling.</p> <p>The costs of separating glass may be reduced as for most councils lower glass volumes would only require a glass crate rather than a wheeled bin. Glass may also be able to be collected less frequently and less glass would mean lower kerbside sorting costs for comingled crate systems. The costs for separating paper and cardboard would be unchanged.</p> <p>Kerbside collections may be cheaper due to fewer vehicle movements and less sorting or more expensive if the same number of vehicles and workers collect less saleable commodity.</p>				
<p>Key for qualitative judgements: 0 about the same as the counterfactual</p>		<p>- worse than the counterfactual -- much worse than counterfactual</p>	<p>++ much better than the counterfactual + better than the counterfactual</p>		

What are the marginal costs and benefits of the preferred option (if no CRS is introduced)?

If no CRS is introduced, Option 3 *'Either glass or paper and cardboard must be collected separately'* would be the preferred option.

Table 15	Cost	Benefit	Net impact	Evidence Certainty
Affected groups	Additional impacts of the preferred option compared to taking no action			
Householders	Higher ongoing operating costs of additional collection services, passed on to householders through rates. Note: assumes capital costs are not funded from rates. May involve the storage of more bins and need for more sorting at home before collection.	Higher potential customer satisfaction with higher percentage of recyclables able to be recycled.	Low Shifting costs between collection and processing, with small positive benefit overall.	Low – CBA has been commissioned.
Councils (Territorial Authorities)	For councils that need to change, costs will vary and may include upfront capital to change collection fleet or at their MRFs (through their contractors).	Retains flexibility to choose whether glass or paper and cardboard are separated and leverages existing collection services. Increased revenue for recyclables due to lower contamination. Economies of scale with most councils requiring access to facilities with similar characteristics.	Medium Impact across TA's will vary, but preferred option will require a reasonable level of investment (in new contracts or contract variations, receptacles and potentially processing facilities).	Low – CBA has been commissioned.
Waste Sector	May require investment in additional fleet and changes to processing facilities (eg, MRFs) to meet separation requirements. Additional services (separate collections) in areas with low populations may have marginal profits because of small scale.	Additional revenue from providing additional services. Higher quality and volume of material to sell to relevant end markets. Cost savings with less maintenance at MRFs with glass out and may increase capacity of MRFs.	Medium Waste sector participants may provide multiple services. For example, they may own a MRF and also provide collection services. A medium overall impact. Requires changes from the waste sector, however they also benefit from higher revenue from delivering more services overall.	Low – CBA has been commissioned.
End Users (Packaging manufacturers and specifiers)	Increased costs arise more from a change to a standardised list of materials than from glass separation.	A greater availability of good quality material for inclusion in packaging. Marketing opportunities through the promotion of recycled packaging.	Low Impact for end users arises more from a change to a standardised list of materials than from glass separation.	Low – CBA has been commissioned.

<p>Environment</p>	<p>The increased collections of different types of material over a wider range of areas (with greater distances to processing facilities) may increase vehicle movements. However if paper is collected separately, there may be greater compaction in vehicles leading to a reduction in vehicle movements.</p>	<p>More material collected that then remains in circulation, avoiding the need for new raw material (ie, supporting a circular economy).</p> <p>Extended landfill life has longer term environmental benefits with fewer landfill sites and a smaller environmental footprint.</p> <p>Changes to receptacles, collection fleet or processing facilities only need to be made where glass or paper and cardboard is not being separated, otherwise existing resources can continue to be used.</p>	<p style="text-align: center;">High</p> <p>The environmental benefits of diverting recyclables from landfill are high, and offsets the increased transport-related emissions from additional collection services.</p>	<p>High - Easy to evidence environmental benefits of reduced volumes of waste to landfill.</p>
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Summary of the separation of glass or paper and cardboard

This proposal seeks to improve the quality of recycled materials, especially paper and cardboard, by reducing the impact of glass fines.

The introduction of a CRS could significantly reduce the amount of glass collected through kerbside recycling. Before choosing a preferred option, it is advisable to await the outcome of any CRS decision, and if a CRS is introduced to assess the impact on glass in kerbside.

If a CRS is not introduced, then Option 3 '*Either glass or paper and cardboard must be collected separately*' is identified as the preferred option. It provides the greatest improvement in recycling quality with the least change (though it includes change for two of the most populous councils, Auckland and Christchurch).

2.F. Wider access to kerbside dry recycling

288. This section considers options to increase access to household kerbside recycling collections. The preferred option is Option 4 '*Councils must provide a kerbside dry recycling collection*'. It is proposed this apply to urban areas with a population of 1,000 or more.

Objectives for increasing access to kerbside recycling

289. Increasing access is based on the premise that kerbside dry recycling is a foundational service in a circular economy and should be as widely available as is practical.
290. Households use a variety of goods in a range of packaging. A low emissions circular economy requires an effective mechanism for returning these materials to our economy instead of extracting more virgin materials. Kerbside recycling collections have higher participation rates and recover more material than drop off options.
291. Kerbside recycling will remain a key service in the foreseeable future. Systemic changes could increase or decrease the importance and impact of a kerbside recycling service. For example, more manufacturers move to packaging that is accepted in kerbside recycling, increasing the role of the service, or if efforts to eliminate unnecessary packaging and use reusable packaging gain traction it could decrease the role for kerbside recycling.
292. This proposal primarily addresses the objective of:
- increasing the quantity of dry recycling placed in kerbside collections rather than the rubbish.

The current state and why it is proposed to increase access to kerbside dry recycling collections

293. Kerbside dry recycling collections are the main way that households recycle their waste and return materials to our economy. Kerbside recycling collections make it more convenient for households to recycle. Where kerbside services are not offered households need to take items to drop-off points, transfer stations or rural recycling stations in order to recycle.

- 294. Currently 8 out of 67 councils do not offer kerbside recycling services.⁷² Six rely on private user pays recycling collections and two have no or limited private collections. Councils also differ on how large a community needs to be before it is offered a service.
- 295. User pays recycling services are all opt in (ie, a household must contact a private company and request a service). Council provided recycling services are covered by rates and households are automatically enrolled. Participation rates in services where people need to opt in are significantly lower than where people are automatically enrolled.⁷³
- 296. Councils that do not provide kerbside dry recycling services have lower rates of recycling performance or do not know their district's performance. Based on publicly available information, diversion rates range from 16 to 28 per cent for councils where only private collections are available – lower than our national diversion rate of 35 per cent (refer Table 16 below).

Table 16 Diversion rate for councils that do not provide a kerbside recycling service

Council	Diversion	Number of private companies offering kerbside recycling
Chatham Islands	Not known	None
Far North District	28 per cent	One company per town
Kaipara	17 per cent	One company per town
Kapiti	21 per cent	Two companies per town
Rangitikei	17 per cent	Two companies in two towns; none in other towns
Upper Hutt	21 per cent	Two companies per town
Waitaki	Not known	Four companies per town
Whanganui	16 per cent	One company per town

- 297. These councils also have limited means to improve performance or kerbside collections. The extent to which this is an issue depends on whether they have:
 - invested in other forms of infrastructure such as resource recovery centres and transfer stations, and/or
 - licensed waste and recycling collectors which may give them an ability to influence or improve the performance of private collections.
- 298. In larger urban centres with no council funded recycling collections, we consider that these services would significantly increase participation rates in recycling and the total amount recycled. On the other hand, some councils who choose not to fund kerbside recycling services have made significant investments in providing rural recycling stations for smaller communities where residents can drop off their materials.
- 299. Over time more councils may offer kerbside dry recycling services as households increasingly demand this service. For example, Western Bay of Plenty and Tauranga City Council established kerbside dry recycling services in 2021. However, it may take a long time in some districts, and it is possible some councils may reduce services. For example, in 2020, Gore District Council shifted from a more comprehensive kerbside dry recycling service to only collecting glass at kerbside.

⁷² Far North District, Kaipara District, Whanganui District, Rangitikei District, Kapiti District, Upper Hutt City, Waitaki District, and the Chatham Islands (information collected in late 2021).

⁷³ <https://www.cambridge.org/core/journals/behavioural-public-policy/article/when-and-why-defaults-influence-decisions-a-metaanalysis-of-default-effects/67AF6972CFB52698A60B6BD94B70C2C0>

300. Currently more than 200,000 people in 26 towns do not have access to council kerbside recycling, see table 17 below.

Table 17 Towns with more than 1000 population in districts with no council kerbside recycling

Council	Towns >1,000	Population	Towns >1,000	Population	Totals
Far North	Ahipara	1,390	Kaikohe	4,820	
	Cable Bay	1,020	Paihia	1,660	
	Haruru	1,150	Opuia	1,220	
	Kaitaia	6,300	Moerewa	1,850	
	Kerikeri	7,850			27,260
Kaipara	Kawakawa	1,610	Mangawhai Heads	2,440	
	Maungaturoto	1,000	Mangawhai	1,150	
	Dargaville	4,960			11,160
Whanganui	Whanganui	42,200			42,200
Rangitikei	Taihape	1,790	Bulls	2,150	
	Marton	5,470			9,410
Upper Hutt	Upper Hutt	44,300			44,300
Kapiti	Otaki Beach	2,040	Paraparaumu	30,100	
	Otaki	4,980	Waikanae	13,650	
	Paekakariki	1,840			52,610
Waitaki	Oamaru	13,700	Palmerston	1,000	14,700
Total		201,640			

Options considered and discarded

301. No feasible options were knowingly discarded.

Options considered to increase access to kerbside dry recycling collections

302. Four options are analysed for increasing access to kerbside dry recycling collections. They are set out from least intervention to most.

1. *Carrying on as we are now (the counterfactual)*. Councils can choose to offer kerbside recycling services to households or not and choose which households in their district have access.
2. *Guidance, technical support and investment*. Provide support to overcome initial barriers to setting up collections and explore options for additional investment from private companies, industry groups or central government.
Option 2 represents the minimum additional intervention. Each further option would be in addition to technical support and investment.
3. *Mandatory minimum diversion rate for kerbside collections*. Set a baseline performance standard for councils, which would encourage them to offer services to increase the diversion of kerbside materials from landfill.
4. *Councils must provide a kerbside dry recycling collection*. Councils could choose to contract the service out or deliver the service directly.

Option 1 – Carry on as we are now (counterfactual)

303. *Option:* Councils continue to choose whether to offer a kerbside dry recycling collection or not. At present this means that in nine districts there is no, or a very limited, council kerbside recycling service. Councils also chose which areas in their districts receive a service.
304. *Likely effect:* 200,000 people living in towns with a population of more than 1,000 people continue to not have access to a rates funded kerbside recycling service (see Table 17 above). If public pressure for these services increases, a few councils may elect to offer a service.
305. *Likely impact:* Access is expected to increase slowly, but there is a risk that services could also be reduced in some areas. Households who choose to recycle, and have to use a private collection, pay more than they would for a rates-funded service.

Option 2 – Guidance, technical support and investment

306. *Option:* The government could provide best practice guidance and seek additional investment to incentivise councils to start offering a kerbside recycling service.
307. *Likely effect:* In seven districts, a private recycling service is the only collection option available to households. Increased investment may persuade two or three of these councils to start offering kerbside dry recycling, especially where private collections only serve part of their district. Some of the seven may be satisfied that they provide adequate access to recycling either via drop off centres, or because they have passed bylaws so that private companies in their district must offer a user pays recycling service alongside any rubbish collection.⁷⁴
308. *Likely impact:* A minor increase in kerbside recycling access and in the quantity of recycling collected.

Option 3 – Mandatory minimum diversion rate for kerbside collections (in addition to increased investment and support)

309. *Option:* Set a performance standard for councils that specifies the minimum proportion of kerbside materials which must be diverted from landfill. This option is explored in more detail under '2.D. Setting performance targets for councils' where a 50 per cent minimum diversion rate, achieved by 2030, is proposed along with a 70 per cent high performance target.
310. This option allows councils a choice about how they reach the standard. For most councils, ensuring access to a kerbside dry recycling service would be part of attaining a 50 per cent diversion rate.
311. For this option to be implemented these councils would likely need to license all private collectors. Licencing would enable them to measure and monitor the performance of kerbside recycling collections. They could also require that where kerbside rubbish collections are offered, kerbside recycling collections are also offered.
312. *Likely effect:* This may depend on how effectively private user-pays recycling collections are performing. Where the recycling service is comprehensive and competitive with rubbish collections, councils may not need to change dry recycling services other than to monitor diversion rates. It is likely that other services such as food scraps collections would also be required to meet the diversion targets.

⁷⁴ For example, the Far North and Chatham Islands have small rural populations and drop off networks. Kapiti and Upper Hutt have licencing conditions for waste collectors in their districts which require them to offer residential recycling services alongside rubbish services.

313. Where private user-pays services are not effective at diverting materials from landfill, a council would have to encourage a private company to improve its services (voluntarily or through bylaws) or contract a company to provide a more effective service.
314. The effectiveness of this option is dependent on timely reporting and actions to improve performance. A 2030 target may see some councils delay action if it is less of a priority than other council matters. Foods scraps collections, which target a large proportion of household kerbside waste, may be prioritised over dry recycling collections.
315. *Likely impact:* Some improvements to kerbside recycling access and quantity collected. However, action may be delayed until closer to 2030. Councils may have limited options for improving performance where private services do not meet targets.

Option 4 - Councils must provide a kerbside dry recycling collection (preferred option)
(in addition to increased investment and support)

316. *Option:* Councils must provide a kerbside service directly (council run or contracted) to urban residents in settlements with a population of more than 1,000.
317. *Likely effect:* seven of the eight councils not currently offering a kerbside recycling collection would be required to start. The Chatham Islands has less than 1,000 people and would not be required to offer a kerbside collection. Households in towns with more than 1,000 population would receive a new rates-funded service and automatic enrolment would provide high participation rates. The costs to the council would increase, however the costs to the residents choosing to recycle is likely to be less. For example, a recycling collection for Rangitikei townships was estimated to cost ratepayers \$90.50 per year⁷⁵ whereas, on current prices, a Rangitikei household would be charged about \$200 per year for a private recycling collection.
318. It is not known if any council already offering kerbside recycling would have to expand their collections. That is whether there are any towns with a population greater than 1000 that do not receive a kerbside recycling service, but are in districts that already offer these services to larger towns.
319. *Likely impact:* Access to kerbside recycling and quantity collected would be maximised. All councils would provide a kerbside dry recycling service to urban areas. Both participation and engagement with the service is likely to increase. Costs to households for accessing a recycling collection are likely to decrease.

⁷⁵ <https://www.rangitikei.govt.nz/files/general/Consultation-Documents/Waste-Management-Minimisation-Plan-2018.pdf>

How do options for wider access to kerbside dry recycling compare to the counterfactual?

Table 18 Wider access to kerbside dry recycling collections	Option 1 <i>Counterfactual</i>	Option 2 Guidance, technical support and investment	Option 3 Mandatory minimum diversion rate for kerbside collections <i>(+ increased investment and support)</i>	Option 4 Councils must provide a kerbside recycling collection <i>(+ increased investment and support)</i>
	<i>Counterfactual</i>	<i>Change from counterfactual</i>		
Effectiveness <i>Criteria: How likely is increased participation and therefore an increase in quantities of recycling collected?</i> <i>The past effectiveness of similar interventions.</i>	0 Councils continue to choose whether to offer a kerbside dry recycling service and to which communities.	+	+	++
Timeliness <i>Criteria: How quickly can the option be implemented and greater access provided?</i>	0 Slow and uncertain.	++	+	++
Cost <i>Criteria: How many councils will need to provide an entirely new service?</i> <i>How many urban areas would other councils need to expand services to? (unknown)</i>	0 Low cost Lower fiscal cost for councils that choose not to implement collections.	- Low cost Cost of increased investment. Only some councils choose to implement.	-- Moderate cost All councils monitor and improve performance but many retain features of current collections.	- Low cost Small national cost, but high for the seven councils which will need to start a kerbside recycling service.
Equitable and inclusive outcomes <i>Criteria: The extent to which all households have the ability to recycle packaging at kerbside (proportion of NZ likely to have access under each option).</i>	0 No change Communities and councils choose whether dry recycling collections are a priority, but households have unequal access to kerbside collections.	+	+	++
Overall assessment	(0) Unsatisfactory – Partially achieves desired outcomes for New Zealand.	(3) Medium Unsatisfactory – Partially achieves desired outcomes for New Zealand.	(1) Low Likely to achieve desired outcomes for New Zealand but at greatest cost.	(5) High Achieves desired outcomes in a timely manner at low cost.
Key for qualitative judgements: 0 about the same as the counterfactual		- worse than the counterfactual -- much worse than counterfactual		++ much better than the counterfactual + better than the counterfactual

What are the marginal costs and benefits of the preferred option (Option 4 – Councils must provide a kerbside dry recycling collection)?

Table 19	Cost	Benefit	Net impact	Evidence Certainty
Affected groups	Additional impacts of mandatory council recycling collections compared to taking no action			
Householders <i>200,000 people live in towns with more than 1,000 population but have no council kerbside recycling collection.</i>	Rates may increase for households receiving a new recycling service. Households who already recycle using a private service will save money as rates funded services benefit from economies of scale.	For households in areas where no service is currently provided, accessible recycling will reduce the cost of disposing of rubbish. Households are automatically enrolled for the service reducing effort, increasing convenience and potentially satisfaction with service.	Low - Shifting the mix between rubbish and recycling is unlikely to have a significant net positive or negative financial impact for householders. Households who were already paying for a private recycling collection are likely to have some savings.	Low – CBA has been commissioned.
Councils (67 Territorial Authorities) <i>59 already offer kerbside recycling. Seven would have to start. One is too small to be affected by the preferred option.</i>	Seven councils will face costs to deliver a new kerbside recycling service: bins and collection fleet (indirect), and operational costs. Costs will vary depending on household numbers, geography, and existing infrastructure.	Greater progress on diverting resources from landfill and positioning their district to take advantage of the emerging circular economy opportunities.	Low - Only impacts a small number of councils that do not currently collect recycling. However, the impact for those councils is high.	Low – CBA has been commissioned.
Waste Sector <i>A small number of companies collect rubbish and recycling from affected towns. Operators of materials recovery facilities.</i>	New collection services require additional vehicles. Additional services may be in areas with marginal profits because smaller scale. Where multiple companies offer competing services some may lose business.	Opportunity to generate more revenue through provision of service to more councils.	Low - Only impacts a small number of districts. Generally, the additional services required are services the waste sector is already providing.	Low – CBA has been commissioned.
End Users (Packaging manufacturers and specifiers)	Negligible impact on end users.	Small increase in recycled materials available for new packaging. Recycling information on packaging will be accurate across more of New Zealand.	Low – Kerbside recycling services, used for packaging recovery, increase reach across New Zealand.	Low – CBA has been commissioned.
Environment <i>Climate emissions Raw material impacts Landfill space</i>	Minor increase in commercial vehicle movements with increased recycling collections, potentially in areas with greater distances to processing facilities.	Recycled materials replace higher emission virgin materials. The diversion of paper and cardboard will reduce landfill emissions. Increased materials collected and recycled avoiding the use of new raw materials. Minor extension to landfill life and in the long-term fewer landfill sites.	Low - Only impacts a small number of councils and a small volume of material. The environmental benefits of circularity of materials are medium and offset any increased transport-related emissions from additional collection services.	High - Easy to evidence environmental benefits of reduced volumes of waste to landfill and increased circularity.

Summary of wider access to kerbside recycling

This proposal aims to ensure that as many New Zealanders as practical face a low barrier to taking part in our circular economy and returning materials to productive use.

The preferred option is Option 4 '*Councils provide a kerbside dry recycling collection*'. This option reaches the largest number of households and is the easiest for households to participate in. A council service is also likely to cost less for individual households than a private service.

2.G. Diverting business food scraps from landfill

320. This section considers options which affect businesses rather than households. Diverting food scraps from landfill is a priority for both the emission reduction plan and the Waste Strategy. Diverting business food scraps would complement proposal 2.B. *Food scraps collections for urban households*, both in terms of building the necessary processing infrastructure and in terms of cumulative emissions and waste reductions.
321. The preferred option is Option 5 "*All businesses must separate food scraps*".

Objectives for increasing business food scrap diversion from landfill

322. Aim: To align household and commercial food scraps collections roll outs to capture economies of scale in processing and collections.
323. This proposal primarily addresses:
- increasing the quantity of food scraps placed in recycling collections rather than the rubbish.
324. The main driver for diverting food scraps from landfill is to reduce greenhouse gas emissions and contribute to the proposed ERP targets.
325. Secondary drivers are contributing to the proposed Waste Strategy targets and establishing the foundations of a circular food system. A circular economy requires returning nutrients and organic matter to the soil. This proposal seeks to increase food scraps collections to a scale sufficient to kickstart the infrastructure and industry necessary to circulate food scraps and eventually other organic materials.
326. Although the previous proposals in this consultation largely relate to household kerbside collections, it is useful to consider capturing food scraps from businesses at the same time because:
- modelling prepared for the ERP indicates meeting biogenic methane targets will require diversion of food scraps from both households and businesses
 - new food scrap processing plants and collection vehicles will have to be commissioned to process new household food scraps collections. If business food scraps collections are implemented at the same time, new plants and infrastructure can be appropriately sized and designed and will benefit from combined economies of scale
 - not doing so risks new infrastructure being built and designed for household volumes only and being inadequate if business collections are implemented at a later date.

Current state and drivers for action

327. Unlike household food scraps, where we have reasonable data and can make some estimates as to the impact of different options on both tonnage and emissions, data on business food scraps has much greater uncertainties around the overall tonnes, the most significant sources, and current disposal choices. We are seeking refinements to our assumptions in this consultation.
328. We do know that to achieve our emissions reduction targets it is not going to be enough to divert just household food scraps from landfill, we will also need to divert business food scraps from landfill.
329. We estimate approximately 25 per cent of the food scraps sent to landfill come from businesses (around 75,000 tonnes, forecast to increase to 100,000 tonnes by 2030).⁷⁶
330. We do know that not every business and not every town has access to commercial food scraps collections. We also know that more and more businesses are looking to reduce their emissions and that reducing food waste and then diverting food scraps from landfill is becoming more of a focus.

What has been done overseas

Table 20 Examples of international policies to divert business food scraps

Country	Implementation
USA	Mandated collections Some states and cities have mandated collections for businesses generating a specific weight of food waste or higher. Most states and cities (eg, Connecticut, Massachusetts, California and New York) which mandate collection limit the mandate to businesses which produce or sell food. Some such as Vermont, Seattle and San Francisco, however, include all businesses generating food waste above a certain weight.
Canada	Mandated collections In Nova Scotia and Vancouver collections are mandatory for all businesses with no weight threshold.
Europe	Bans and mandated collections Of the 28 EU members, six have implemented bans on landfill disposal of organic and/or FOGO waste. 17 EU members have mandatory organic waste source separated collection and processing systems. Most cover all residents and all commercial businesses with no weight limits. Scotland, Northern Ireland and France have trigger levels for commercial food waste generation (>5kg/week for Scotland and Northern Ireland and 33 kg/day for France).
England	Differential landfill tax Uses taxes on landfilled waste to encourage diversion. A higher tax of NZ\$186 per tonne is charged for active waste (materials that decay or contaminate land – including household waste) while a lower tax of NZ\$5.90 per tonne is charged for inert waste. ⁷⁷
Scotland	Mandated collections with phased by size of business 2015: household food scraps collections were made mandatory. Commercial food businesses with more than 50 kg of food scraps per week need to divert their food scraps from landfill. 2016: businesses producing more than 5kg of food scraps per week need to divert their food scraps from landfill.

⁷⁶B. Middleton. Waste Not Consulting, pers. comm., 2021

⁷⁷ <https://www.politics.co.uk/reference/landfill-tax/>

Australia	<p>Landfill levies</p> <p>Most but not all states have a levy on waste to landfill to encourage diversion. Levies tend to vary by type of landfill and whether it is rural or urban, but there is no differential levy for organic waste.</p>
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331. A review in 2019 found that mandating source separation organic wastes (including food scraps but sometimes wider) are largely and effectively used to support other policies (landfill bans, taxes, and levies) to increase resource recovery.⁷⁸

Options considered and discarded

Mandatory food scraps separation with no geographical phasing

332. We did not consider bringing in mandatory separation without geographical phasing for two reasons. Firstly, a requirement for everyone to act at once would need to wait until appropriate facilities were in place across the country. It makes sense to start diverting food scraps sooner where this is already practical. Secondly, waste levy revenue is a likely source of investment support establishment of new food scraps processing facilities. The benefits of the increased and expanded waste levy are not fully realised until mid-2024. By initially encouraging collections near existing processing facilities, a lower level of investment is needed in the short term (eg, collection bins and vehicles), allowing more time for business planning and design of new facilities.

Options considered to divert business food scraps from landfill

333. Six options are analysed for increasing the diversion of business food scraps. They are set out from least intervention to most:

1. *Carry on as we are now (the counterfactual)*. Businesses in some towns and cities have access to commercial food scraps collections, but many do not.
2. *Investment to set up business food scraps collection infrastructure*. Explore additional sources of investment (whether this be from private companies, industry sectors, or central government funds) to incentivise business food scraps collections and processing.

Option 2 is regarded as the minimum intervention to accelerate food scrap diversion and processing. All following options include increased investment.
3. *A higher waste levy on landfilled food scraps*. The waste levy on food scraps could be made higher than on other materials sent to landfill.
4. *Food businesses must separate food scraps*. Businesses which produce or sell food could be required to collect food waste separately from other materials.
5. *All businesses must separate food scraps*. All businesses could be required to collect food waste separately from other materials.
6. *Ban on all food waste to landfill*. Businesses (and households) would not be permitted to landfill food scraps.

⁷⁸ 2019 [Review of Separate Organics Collection Legislation \(nsw.gov.au\)](https://www.nsw.gov.au/review-of-separate-organics-collection-legislation)

Option 1 - Carry on as we are now (the counterfactual)

334. *Option:* Businesses can choose to pay for a food scraps collection service. The service may only be offered in regions where it is profitable for the private sector to do so. The distance to a facility which can process the food scraps is the main barrier to waste companies offering collections to businesses.
335. *Likely effect:* Uptake continues to rise, as businesses proactively looking to reduce their carbon footprint seek services. In practice, food scraps collections are only likely to be offered where existing collections and processing infrastructure already exist. Some businesses who want to divert their food scraps may not have access to collections.
336. *Likely impact:* A limited increase in food scraps diverted from landfill. Emissions from landfills will continue to rise over several decades. Our primary production sector will be unable to take advantage of compost and digestate to reduce their carbon footprint and improve soil quality.

Option 2 - Investment to set up business food scraps collection infrastructure

337. *Option:* Central government explores additional sources of investment (whether this be from private companies, industry sectors, or central government funds) to incentivise business food scraps collections. Investment may go towards collection infrastructure such as bins or vehicles, or processing infrastructure such as composting or anaerobic digestion facilities or facilities which make stock food from food scraps. The waste levy or climate change mitigation investment may be a likely source of funding.
338. *Likely effect:* Some waste operators may take advantage of increased investment to expand existing services or develop services in new regions. Expansion would still be dependent on business demand for food scraps collections. Business collections in new areas would probably rely on the establishment of new processing facilities to meet demand from another source such as mandated household collections. Regions where it is more profitable to provide food waste collections will benefit. Other regions may still lack services.
339. *Likely impact:* Increased food scraps diversion, but only slowly due to uncertainties around demand and the risks of expansion and establishing new facilities. Some emission avoided, some gains in circularity for our food system.
340. *Mechanism and timing:* Some investment could be provided via the Waste Minimisation Fund. However, the expansion of the waste levy will only increase funding slowly for the first few years and other projects will compete for available funds. If more urgent and directed action is desired to reduce emissions then dedicated sources of investment could be explored to be made available from as early as 2023.

Option 3 - A higher waste levy for food scraps to landfill (in addition to investment)

341. *Option:* Currently, the waste levy is the same across all materials sent to landfill whether the material is likely to biodegrade and contribute to climate change or inert. A higher levy rate could be applied to food scraps (and potentially other biodegradable materials) to encourage their diversion from landfill. This same rate would also likely apply to household food scraps as it is often indistinguishable from business food scraps.
342. *Likely effect:* The effect would depend on the rate set, how quickly it was phased in, and how well it was monitored and enforced. At higher rates it becomes more economic to send food scraps to anaerobic digestion or composting instead of landfill. However, some businesses could choose to move to garbage disposal units to dispose of their food scraps through the wastewater system and avoid the levy. Some council's wastewater treatment plants can handle increased food scraps, many cannot.
343. Monitoring would require checks on the proportion of food scraps in material sent to landfill and that loads were being levied at the right rate. In practice many waste operators would be likely to require their customers to separate food scraps from

general material. Separate streams would encourage alternative processing instead of landfill.

344. *Likely impact:* This could be quite effective at diverting food scraps from landfill if rates were set high enough quickly enough but monitoring and compliance would be costlier than other options. Businesses which can adapt easily would do so, but some may choose to pay the higher costs and continue to send food scraps to landfills. Emissions are likely to be lower than the counterfactual.
345. *Mechanism and timing:* Section 41 of WMA allows for differential levies to be set and one could be introduced for food scraps (or more broadly for organic waste). The regulation could be in place by 2024 but may not be in force for several years afterwards to provide lead in time to establish collection and processing infrastructure. Compliance, monitoring, and enforcement systems would also need to be established.

Option 4 – Food businesses must separate food scraps (in addition to investment)

346. *Option:* Regulation could require businesses which produce or sell food to collect food scraps separately from other waste materials. This option aims to target businesses more likely to produce significant amounts of food scraps.
347. The option could be phased. For example, businesses with access to existing food scraps collections could have until 2025 to separate food scraps, while businesses further away and where new facilities may have to be built could have until 2030. For this analysis we have suggested that ‘access’ could be defined as within 150 kilometres of an existing food scraps processing facility.
348. *Likely effect:* In areas with existing processing facilities, waste collection companies could expand food collection services relatively quickly. Businesses would still have choices as to how they dealt with their food scraps. Some may choose to send the scraps for stockfood or compost on site. Private sector investment in food scraps processing facilities would be expected to increase to meet demand for these services due to the requirements. Investment could be further stimulated by any additional government funding.
349. *Likely impact:* Most businesses producing large quantities of food scraps are likely to be captured. Most major urban centers,⁷⁹ covering at least 45 per cent of the population, already have facilities which could process business food scraps and businesses in those centers would be required to separate food scraps by 2025. Donations of food to food-rescue groups is likely to increase. Businesses will also have greater visibility of how many food scraps are wasted and be motivated to reduce food waste.
350. For areas without existing processing facilities, we assume that a 2030 deadline and the proposal to mandate household food scraps collections will provide certainty for investment in new facilities. We assume a medium amount of business food scrap would be diverted under this option.
351. *Mechanism and timing:* Requiring business to separate food scraps would require powers beyond the current WMA. Revised waste legislation may consider options such as ‘duty of care’ obligations which could be used to require businesses to separate food scraps. The revised legislation is expected to be passed in 2024 and regulation could be introduced in 2025.
352. The publicly available record of businesses registered under the New Zealand Food Act 2014 could be a mechanism for identifying businesses which produce and sell food. Some food producing businesses may have negligible food scraps, such as a

⁷⁹ Upper Hutt, Wellington, and Dunedin are the only major urban centres with no spare capacity.

small honey business, and some non-food businesses with large numbers of employees may produce significant food scraps but their waste would not be captured.

Option 5 - All businesses must separate food scraps (preferred option)
(in addition to investment)

353. *Option:* Regulation could require all businesses to separate food scraps from other waste materials. This requirement could be phased similarly to Option 4. For example, that businesses with access to existing food scraps collections, within 150 kilometres, could have until 2025 to separate food scraps. Businesses in areas where food scrap processing facilities need to be built could have until 2030 to separate food scraps.
354. *Likely effect:* Certainty that demand for food scrap collections and processing will rise, would give confidence to the private sector to invest in new services or expand existing operations. Businesses large and small would need to make space for an additional bin and change processes so food scraps are separated. Separation of food scraps is likely to lead to increased options for processing food scraps even if food scraps are not explicitly banned from landfill.
355. Large increases in compost and digestate availability may have to be managed to ensure a sustainable market develops. Donations of food to food-rescue groups is likely to increase. Councils, particularly in more rural areas, who are rolling out new food scraps collections, may look to offer food scraps collections to businesses through a targeted rate resulting in savings for households and businesses alike due to economies of scale.
356. *Likely impact:* Medium diversion of food scraps in 2025, leading to high by 2030. This is estimated to divert 50,000 tonnes per annum by 2030 and reduce emissions by about 20 ktCO₂ in 2030.
357. *Mechanism and timing:* The current legislation would need to be revised as for Option 4. The broad application to all businesses may allow for simpler compliance checks, for example checking that all waste companies provide a food scraps collection container with every business rubbish collection.

Option 6 - Ban disposal of food scraps to landfill (in addition to investment)

358. *Option:* Businesses (and households) would not be permitted to landfill food scraps. Due to the level of change and infrastructure required, a ban before 2030 would be difficult to achieve. However, a ban is one option contemplated in the emission reduction plan as potentially necessary to meet the proposed methane reduction targets.
359. *Likely effect:* Businesses would need to put steps in place to ensure their waste collection does not include food scraps; waste collectors and/or disposal sites would need monitoring and processes to ensure compliance.
360. *Option:* Ban the disposal of food scraps to landfill by 2030. Phased implementation could include an earlier deadline of 2025 for districts and cities which already have appropriate food scrap processing capacity. This option is also analysed under '2.B. Food scrap collections for urban households'.
361. The ERP consultation document proposes "*that all organic material disposal be banned from Class 2–5 [landfills] by 2030. In addition, key organic materials such as food, green, and paper waste could also be banned from Class 1 landfills by 2030.*"⁸⁰ Household waste is only accepted at Class 1 landfills.
362. *Likely effect:* Systems would need to be established to ensure food waste was not disposed of to landfill. Adequate collection and processing infrastructure would need to

⁸⁰ [Emissions-reduction-plan-discussion-document.pdf \(environment.govt.nz\)](#)

be developed (including in both urban and rural areas) to ensure food scraps could be disposed of in other ways. A ban would be likely to require a greater level and wider range of infrastructure and collection fleet than Option 5 to ensure that businesses in rural and low population areas would be able to divert their food scraps.

363. Bans on landfilling food scraps (or more broadly biodegradable materials) are typically enforced at landfill and require the landfill operators to inspect and accept or reject loads.⁸¹ Where waste tracking systems are legislated these can be used to verify that waste does not contain, or no longer contains, the banned material such as food waste. Currently, New Zealand does not have a waste tracking system. Therefore, monitoring would be required at disposal sites and/or of businesses' and households' waste disposal to support a ban.
364. *Likely impact:* This option has the highest compliance cost due to the level of auditing required. However, it is the option which would have the maximum impact on waste to landfill and emissions reductions.
365. By 2030 a ban is estimated to divert 374,000 tonnes per annum of both business and household food scraps from landfill. The total food scraps diversion would reduce annual biogenic methane emissions by around 144 kt CO₂e in 2030 and contribute about 23 per cent of the Climate Change Commission's modelled reduction pathway.
366. *Mechanism and timing:* Section 23(1)(a) of the WMA could be used to ban the disposal of food waste to landfill. This provision requires adequate infrastructure is in place and a reasonable time for adjustment is given. A ban could be drafted relatively quickly, but it is expected that it would not come into force until 2030 to allow adequate infrastructure to be put in place. Other options that encourage infrastructure development could be seen as a first step towards a ban if it becomes necessary.

⁸¹ [Landfill Ban Investigation \(awe.gov.au\)](http://awe.gov.au)

How do the options for diverting business food waste compare to the counterfactual?

Table 21 Business food waste options	Option 1 <i>Counterfactual</i>	Option 2 Invest in business food scraps infrastructure	Option 3 A higher waste levy for food scraps to landfill	Option 4 Food businesses must separate food scraps	Option 5 All businesses must separate food scraps	Option 6 Ban disposal of food scraps to landfill
	<i>Counterfactual</i>	<i>Change from counterfactual</i>				
<p>Effectiveness</p> <p><i>Criteria: The quantity of food scraps likely to be diverted from landfill.</i></p> <p><i>The likely increase in access to collections and processing facilities as this is the main barrier for businesses to be able to divert their food waste.</i></p> <p><i>The increase in confidence of the private sector to invest in these services.</i></p>	0	+	+	++	++	++
	Some regions have no food scraps processing facilities and no access to commercial food scraps collections. Collections are likely to increase only slowly and in an ad hoc manner.	Encourages more processing facilities and collections to be setup, but access to services in some regions would remain challenging.	Incentivises some businesses to divert food scraps, but limited access in some regions. Businesses with few food scraps may choose to absorb increased costs.	High private sector confidence to invest in additional food scrap processing facilities and collections. Businesses likely to generate food scraps must separate. Total food scraps diversion less than Options 5 and 6 but more than Options 1-3	The private sector has high confidence to invest in additional food scrap collections and processing facilities. Total food scraps diversion less than Option 6 but more than Option 4 and significantly higher than Options 1-3	Maximum food scraps diversion. Strongest signal to private sector to invest in collections and processing.
<p>Timeliness</p> <p><i>Criteria: How well the option aligns with achieving the proposed targets by the dates set in the Waste Strategy and the ERP.</i></p> <p><i>How fast the private sector may choose to invest in providing these services and the speed with which businesses may have access to these services.</i></p>	0	+	+	++	++	++
	Some companies who process food scraps through composting or anaerobic digestion are looking to set up facilities in new regions, but without regulation investment may be slow.	Increased investment in collections and processing. Small or low profit areas may lag.	Medium investment certainty. Increased investment in collections and processing. Small or low profit areas may lag.	High investment certainty. Businesses near facilities start reducing emissions sooner. Phasing allows investment to be spread over time.	High investment certainty. Businesses near facilities start reducing emissions sooner. Phasing allows investment to be spread over time.	High investment certainty. More and larger facilities required. Could be geographically phased as investment may be stretched in earlier years if all regions in competition.
<p>Cost</p> <p><i>Considers a whole of New Zealand perspective</i></p> <p><i>Criteria: How costly to implement this option relative to the counterfactual?</i></p>	0	-	-	-	--	--
	Some waste companies are implementing business food scraps collections and applying to the Waste	A small increase in infrastructure built, but less than with stronger policy measures.	A differential levy would mean more funding is available to invest in new processing and collection infrastructure.	Food businesses collect food scraps separately incurring a cost if using a commercial food scraps collection.	All businesses food scraps separately incurring a cost if using a commercial food scraps collection.	Increased economies of scale compared to Options 4 and 5, but higher monitoring and compliance costs.

<p>Considers the investment for new processing facilities and collections</p> <p>Considers economies of scale.</p>	<p>Minimisation Fund to establish or expand processing facilities.</p> <p>Where available businesses chose whether to use collections.</p>	<p>Where available businesses chose whether to use collections.</p>	<p>Some businesses may choose to absorb the increased cost rather than use a food scraps collection.</p>	<p>Fewer economies of scale for processing capacity than for Options 5 and 6 due to fewer businesses separating food scraps.</p>	<p>Greater economies of scale for developing processing capacity. But some smaller areas may be marginally profitable.</p>	
<p>Equitable and inclusive outcomes</p> <p>Criteria: How fairly the option treats all stakeholders (eg, small and large businesses, not for profits, commercial entities)</p> <p>Equitable outcomes considers the extent to which all businesses have the ability to divert their unavoidable food scraps from landfill to reduce their carbon footprint.</p>	<p>0</p> <p>Businesses in some regions who want to reduce their carbon footprint or divert food scraps are unable to access collections.</p> <p>Businesses in smaller towns are likely to be most disadvantaged.</p>	<p>0</p> <p>Businesses in some regions who want to reduce their carbon footprint or divert food scraps are unable to access collections.</p> <p>Businesses in smaller towns are likely to be most disadvantaged.</p>	<p>+</p> <p>Businesses in some regions who want to reduce their carbon footprint or divert food scraps unable to access collections.</p> <p>Businesses in smaller towns are likely to be most disadvantaged.</p>	<p>++</p> <p>Businesses likely to produce the most food scraps must participate.</p> <p>Processing facilities and collections are set up around the country.</p> <p>Other non-food businesses who wanted to voluntarily access these services would then be able to.</p>	<p>++</p> <p>All businesses would divert food scraps from landfill.</p> <p>Processing facilities and collections are set up around the country.</p>	<p>++</p> <p>All businesses would divert food scraps from landfill.</p> <p>Processing facilities and collections are set up around the country.</p>
<p>Compliance and Monitoring</p> <p>Criteria: considers the technical feasibility of monitoring and compliance as well as how much effort would be involved.</p>	<p>N/A</p> <p>None required</p>	<p>N/A</p> <p>None required</p>	<p>--</p> <p>Monitoring whether loads of waste going to landfill contain food scraps is technically challenging and requires high monitoring.</p>	<p>--</p> <p>Identifying food businesses may be more time consuming than Option 4 but not technically challenging.</p>	<p>-</p> <p>Collection companies could be audited to see whether all their customers are provided food scraps collections.</p>	<p>--</p> <p>This option requires the most compliance but is technically simpler than option 3.</p>
<p>Overall Assessment</p>	<p>0</p>	<p>Low (1)</p> <p>Partially achieves desired outcomes.</p>	<p>Low (-1)</p> <p>Partially achieves desired outcomes for New Zealand but challenging to implement.</p>	<p>High (3)</p> <p>Mostly achieves desired outcomes in a timely manner but complex to implement.</p>	<p>High (3)</p> <p>Preferred option. Mostly achieves desired outcomes in a timely manner.</p>	<p>Medium (2)</p> <p>Completely achieves desired outcomes but takes the longest and at the greatest cost.</p>
<p>Key for qualitative judgements:</p>		<p>- worse than the counterfactual</p> <p>0 about the same as the counterfactual</p> <p>-- much worse than counterfactual</p>		<p>++ much better than the counterfactual</p> <p>+ better than the counterfactual</p>		

What are the marginal costs and benefits of the preferred option (all businesses must separate food scraps)?

Table 22	Cost	Benefit	Net impact	Evidence Certainty
Affected groups	Additional impacts of the preferred option compared to taking no action			
Households	May pay slightly more for food-related goods and services as higher waste management costs are passed onto customers.	May be higher satisfaction with goods and services knowing food waste minimised. May be more food donated to food rescue or foods close to expiry dates sold at discounted prices to reduce food waste.	Low Impact likely to be marginal relative to overall price of goods and services.	Low – CBA commissioned.
Councils (Territorial Authorities)	Could play a role in enforcement of collection service provision, with associated enforcement costs.	Reduction in waste to landfill from commercial sector which is a sector that councils have little influence over. For smaller councils, household kerbside food scraps collections may become more affordable due to combined economies of scale.	Medium Only if councils are involved in enforcement.	Low – CBA commissioned.
Waste Sector	Additional processing facilities and fleet. Additional services for commercial customers in areas with marginal profits due to smaller scale. Cost of new processing facilities and vehicles could be shared with central government and councils if household food scraps collections also increase.	Additional service offering and potential to generate greater business revenue.	Medium The overall impact of the change is medium because the changes required rely heavily on waste sector's ability to deliver the changes, however they also benefit from higher revenue from delivering more services overall.	Medium – CBA commissioned.
Businesses	Increased costs for food scraps collections, but lower costs for rubbish collections.	Larger businesses may see financial and reputational benefits in reducing their carbon footprint. These benefits may not be as significant for smaller businesses. Separate collections may also incentivise businesses to reduce food waste.	Low The overall impact is low as higher costs are offset by lower rubbish collection costs and brand enhancement from reduced carbon emissions.	Low – CBA commissioned.
Environment	Some additional vehicle movements due to additional collection.	Significant reduction in emissions from landfill as a result of food scraps diversion.	High The environmental benefits of diverting organics from landfill are high, and offset any increased transport emissions from additional collection services.	High Easy to evidence environmental benefits of reduced volumes of waste to landfill.

Summary of diverting business food scraps from landfill

This proposal aims to ensure food scrap diversion from landfill optimised by stimulating the development of business food scraps collections at the same time as household food scrap collections.

Diverting food scraps from landfill is a priority for both the draft emission reduction plan and the new Waste Strategy. Both business and household collections are necessary to achieve these targets. The increased economies of scale for food processing infrastructure also supports household food scraps collections and our transition to a circular food system.

The preferred option is Option 5 '*All businesses must separate food scraps*'. Businesses with access to existing food scraps collections (for example within 150 kilometres) would have until 2025 to separate food scraps. Businesses in areas where food scrap processing facilities need to be built would have until 2030 to separate food scraps.

This would be likely to see medium diversion of food scraps in 2025, leading to high diversion by 2030. The option is estimated to divert 50,000 tonnes per annum by 2030 and reduce emissions by about 20 ktCO₂ in 2030.

Section 3: Delivering an option

How will the new arrangements be implemented?

- 367. The proposals in this interim regulatory assessment cover a wide range of options and many mechanisms with different responsible parties. This interim assessment will only lightly discuss the potential implementation arrangements.
- 368. A more comprehensive discussion will be included in the full regulatory impact statement that accompanies any options that proceed.

Range of potential mechanisms

- 369. Education, voluntary agreements, investment, and regulated outcomes or actions are all considered in the range of options assessed. Responsibilities for implementing, complying, monitoring and evaluating vary across mechanisms as does the speed of implementation.
- 370. Within the options, voluntary mechanisms are usually suggested to be quicker to put in place than regulation. Noting that voluntary mechanisms are also suggested to be supported by increased investment, which could take time to secure depending on the process involved (eg, funding applications, government budget, or attracting private investment).
- 371. Where options encompass regulation, it is in some cases already being developed, for example amendments to Waste Minimisation (Information Requirements) Regulations, it may be practical to implement under the current WMA, or in some case would require new powers as proposed for a revised waste legislation.
- 372. Regulations already under development may be enacted in 2022 or 2023. Regulation to be developed under the current WMA could be enacted in 2023 or 2024, while regulation under a revised waste legislation is not likely to be enacted before 2025.
- 373. In some cases, where a long lead-in time is required, for example a national waste licencing system or a ban on food scraps to landfill, the regulations while enacted, may not come into force until the late 2020s or until 2030.
- 374. Engagement with affected parties during consultation and regulation development would be expected to ensure sufficient lead in time is provided for implementation and compliance.

Responsibilities for implementation

- 375. A range of parties across the product, waste and resource recovery value chain have responsibility for different aspects of implementing any chosen options. Table 23 below provides a generalised example:

Table 23 Parties and potential responsibilities for kerbside recycling and food scraps services

Parties	Central government (Ministry for the Environment)	Iwi / tangata whenua	Councils (Territorial authorities)	Waste and resource recovery sector	Producers, retailers, and packaging sector	Households and businesses
Potential responsibilities	Evaluation and review Legislation Governance	Treaty partner Partner with councils on circular economy in their rohe.	Service design and delivery Reporting Governance	Service design and deliver Reporting Governance	Product and packaging design and labelling Product stewardship Governance	Correct placement of materials at kerbside

Brief description of potential roles

376. The Ministry for the Environment is likely to be responsible for developing any legislation, regulations, or voluntary agreements to implement any chosen options. The regulatory stewardship role would extend to evaluation of effectiveness and facilitating any governance roles (eg, if a governance body were established, oversee any subsequent changes to a standardised kerbside system).
377. Māori as Te Tiriti partners and tangata whenua will have a role in shaping enduring solutions for a circular economy in Aotearoa New Zealand. The proposed Waste Strategy and new waste legislation recognise the importance of finding new ways to work effectively and in partnership with tangata whenua on waste and circular economy issues and note the opportunities to significantly increase the participation of Māori in the waste sector. Iwi / tangata whenua may have a particular interest in local systems, such as kerbside recycling and food scraps collections, which affect their rohe.
378. Councils have a key role in service design, communication, and delivery, being responsible for most household kerbside services. Several proposals also place a responsibility for monitoring and reporting on councils. It would be expected that councils or representative bodies would be involved in any ongoing governance of kerbside collections.
379. The waste and resource recovery sector spans collectors and recycling processors, through to remanufacturers and composters. The proposals are expected to affect the services that the sector provides and may introduce new responsibilities, such as providing specific services or reporting requirements. The sector is also expected to be involved in any ongoing governance of kerbside collections.
380. Producers, retailers and the packaging sector will be less directly affected. No proposals are expected to impose new responsibilities on the sector. However, they will be affected by any changes to what is accepted in kerbside recycling and food scraps collections. The sector has a role to play in designing products and packaging fit for a circular economy and communicating end of life disposal to households. The sector is expected to increasingly take responsibility for the end of life of products and packaging through product stewardship schemes. These schemes may play a role in determining which materials are collected in kerbside recycling in the future.
381. Households and businesses are responsible for correctly sorting and placing their rubbish, recycling and food scraps at kerbside, although this is an indirect requirement (except in a few proposals). For example, a ban on disposal to landfill would explicitly require households and businesses to not place food scraps in the rubbish. Similarly, businesses may be made responsible for separating food scraps from other waste.

How will the new arrangements be monitored, evaluated, and reviewed?

382. There is significant room to improve the data that is collected on waste disposed of, and diverted, from kerbside. Improved data will be necessary for the Ministry to monitor, review, and measure the effectiveness of the proposals in this interim regulatory impact statement.
383. Some improvements to data collection and reporting have already been consulted on in proposed amendments to Waste Minimisation (Information Requirements) Regulations 2021.⁸² These amendments would require councils to report on their performance in achieving waste minimisation and against any standards for implementation of their WMMP.
384. Some proposals in this impact statement suggest that a performance standard could be an effective mechanism to implement an assessed option. Reporting on progress

⁸² Proactively released Cabinet paper [Additional proposals to improve the availability of waste data](#)

could then be required from councils. The amended information requirement regulations are likely to be in place before 2023, although development of a performance standard, or standards, make take slightly longer.

385. Private waste companies also collect waste and recycling from kerbside. In order to gain more complete data on waste and diversion, proposal 2C in this document suggests requiring reporting from private companies on their kerbside collections. If the preferred option is adopted, it is possible that private companies could be required to start reporting in 2024.
386. Proposed new waste legislation was consulted on in November 2021. One of the proposals considered a national waste licencing regime. Such a system would provide much improved waste data more generally. However, the development and implementation of a national system if adopted would be expected to take several years and may not see reporting start until 2026 or later. This is likely to be too late to monitor the early gains intended from many of the proposals in this document, some of which have early actions phased for completion by 2025 and later actions for completion by 2030.
387. How proposals would be effectively monitored and evaluated will be discussed in greater detail in the full regulatory impact statement that accompanies any options chosen to proceed.

Appendix 1 – Details about collection and recycling specific materials

Specific issues with aerosol cans, aluminium foil, trays, and plates

388. Recycling aerosol cans, aluminium foil, trays and plates in an ethical and circular manner requires separating them from the metal food and beverage containers such as the aluminium cans or tin cans collected in kerbside. Most materials recovery facilities sell all their aluminium as a ‘used aluminium beverage container bale’ as this makes up almost all of the aluminium collected. The specifications for these bales typically state that aerosol cans, aluminium foil, trays, and plates should not be included.⁸³
389. This is due to the contamination from the plastic components, and for aerosols, the greater risk of contamination from the contents of non-empty aerosols. If these materials are accepted in a collection but not sorted separately, our recycling system is knowingly sending contamination to recycling processors who do not want it.
390. Facilities that process kerbside materials are generally set up to sort steel items (using magnets) and aluminium items (using eddy currents) from other materials. Secondary sorting to split the steel or aluminium stream by the type of item is not usual. To do so would require either hand sorting or using optical recognition technology to identify and divert foil, trays, plates or aerosol cans from food and beverage cans.

Aerosol cans

391. Aerosol cans can be made from steel or aluminium and are accepted by more kerbside collections than not. The steel and aluminium of the cans is recyclable, but aerosol cans need specific processing. Our kerbside systems are not usually set up to process aerosols in an ethical, high quality, and safe manner.
392. The trigger in aerosol cans is plastic and needs to be removed. Specialised metal recyclers do this by shredding the aerosol cans and then separating the steel and aluminium from the remaining flock (everything else). Because steel has a lower value than aluminium, the extra time and cost involved in this step can make processing steel aerosol cans financially marginal.
393. Partly filled and still pressurised aerosol containers can pop explosively during crushing in the collection truck, shredding, or compaction of a scrap metal bale. Some propellants used are flammable heightening the risk. The risks can be managed but usually require upgrading safety equipment such as enclosing compactors and processing fewer aerosols at one time, which increases costs.

Aluminium foil, trays and plates

394. Aluminium foil, trays and plates contain recyclable aluminium. However, the thinness of the material poses problems for collection, sorting, and eventual recycling.
395. The eddy currents used to sort aluminium will not work on a thin light item. Instead, foil, trays and plates may be sorted into the paper and cardboard stream and become contamination. Compacting these items into a dense ball larger than 55cm can allow them to be sorted into the aluminium stream but relies on householders to collect and compact these items in this manner.
396. Once in the aluminium stream thin items face the same ethical hurdle as aerosols. By default, they are included in the used beverage container bales despite specifications explicitly excluding them.

⁸³ New Zealand exports our scrap steel and aluminium to be recycled. Most exporters use the internationally accepted specifications of the Institute of Scrap Recycling Industries [Scrap Specifications Circular | ISRI](#)

397. At the remelting furnace any uncompacted thin light aluminium is likely to float to the surface and be oxidised rather than be melted into new aluminium.
398. Aluminium foil, trays and plates are often plastic coated and/or have food residues. The relative thinness of the aluminium can make these significant contaminants. They make up more than 5 per cent of the weight of collected material, decreasing the value of the bale and increasing energy and emissions when these contaminants are burnt off at the remelting furnace.
399. If aluminium foil, trays and plates could be efficiently sorted into their own stream, they could be sold as a post-consumer aluminium foil bale. But this is a much lower value commodity and depending on volumes and costs of separation is likely to be financially marginal.