Fortnightly rubbish collections: evidence, impacts and options to support households

1. Purpose

1. This paper outlines the background and evidence behind the proposal to move from weekly to fortnightly rubbish collections for the Auckland region. This evidence includes the following.

    - It is the best option to reduce waste from kerbside collections to landfill, including related greenhouse gas emissions.
    - The majority of Aucklanders will be able to cope with fortnightly collections; and that we can support other householders who may struggle.
    - Other related perceptions of Aucklanders including litter/dumping, odour, pests and impacts of kerbside recycling standardisation can be addressed.

2. The paper is divided into three parts:

    - **Part One.** Outlines the context, including background, benefits and scope of the proposal, and how it will help us meet targets and international commitments outlined in the Waste Plan 2024.
    - **Part Two.** Outlines the impacts of this proposal on households, including where concerns have been expressed about the ability of households to cope, impacts on litter and illegal dumping, and impacts on odours and pests.
    - **Part Three**. Outlines the evidence that moving to a fortnightly rubbish collection service will reduce kerbside waste and provide other benefits such as carbon savings, cost savings and amenity benefits.

Part One: Context of the fortnightly rubbish collection proposal

2. Background

3. Auckland Council has a statutory obligation to promote effective and efficient waste management and minimisation within the region.[1]

[1] s42 Waste Minimisation Act 2018

4. Fortnightly rubbish collections for Auckland were first proposed in the Waste Management and Minimisation Plan 2012 as part of an overall package to achieve Auckland's waste minimisation targets and move towards its vision of Zero Waste by 2040.

5. This proposal was reconfirmed in the Waste Management and Minimisation Plan 2018, with the caveat, based on the Hearings Panel feedback, that the council would continue to provide weekly kerbside rubbish collections until the kerbside food scraps collection is well embedded, after which rubbish collections will be reviewed before moving to fortnightly collections.

6. The food scraps collection service was rolled out to 475,000 households across the region in 2023. As of August 2024, 28,000 tonnes of food scraps have been diverted from landfill via this service, with an average set-out rate of 34 per cent.

7. The draft Waste Management and Minimisation Plan 2024 (draft waste plan) therefore reconfirmed the proposed move to fortnightly kerbside rubbish collections and was drawn out as a key question within the public consultation on the draft waste plan.

8. Public consultation occurred alongside the draft Long-Term Plan 2024-2034 in March 2024. Over 4,100 responses were received on the draft waste plan.[2] Feedback on most aspects of the draft plan was supportive with only minor changes proposed. However, feedback on the proposed move to fortnightly kerbside rubbish collections was less conclusive, with 41 per cent supporting the proposal, 9 per cent unsure and 50 per cent not supporting.

9. Staff have completed additional research on the proposal to move to fortnightly collections, linked to concerns raised during consultation. This paper builds on the evidence outlined in the Waste Assessment 2023, supplemented by further desktop research and information from bin surveys in Auckland carried out in June 2024. It also incorporates feedback from twelve councils in New Zealand who responded to a survey and information requests in July 2024 on their fortnightly services. And it compiles information available online from the 18 New Zealand councils that have already implemented a fortnightly rubbish collection service.

3. Why we are proposing a fortnightly rubbish service

10. The primary driver behind a fortnightly rubbish service is to meet our statutory obligation to promote effective and efficient waste management and minimisation within the region.[3]

[2] The summary of submissions is available through the agenda report for the Policy and Planning Committee, 10 October 2024.
[3] s42 Waste Minimisation Act 2018

11. This paper includes evidence showing that collecting waste less frequently, among many other benefits, helps residents to continue to reduce waste to landfill. This is because people are incentivised to:

    - minimise their waste
    - use their food scraps bin, which will still be emptied weekly, or to compost at home
    - use their recycling bins so that recyclable materials are not put into their rubbish bin.

12. Reducing waste to landfill is important not just because of the financial costs of collection, transport and disposal, but also because of hidden costs affecting the economy, the environment and our communities, such as impacts of extracting and processing replacement resources (refer Figure 1 below).

Figure 1: Depiction of the visible and invisible or hidden costs of waste

4. Scope of the proposed service

13. The proposal is for fortnightly rubbish collections across the region to all properties that currently have a weekly rubbish bin or bag service, however it includes exceptions to account for local conditions. Areas such as the city centre needing a more frequent collection service, or multi-unit developments (MUDs) where space constraints preclude a standard three bin collection would not be affected. Exceptions will include rural areas and settlements and the Hauraki Gulf Islands, where further investigation is needed on how to transition these areas before a decision is made.

5. Options to reduce kerbside rubbish, and advantages of changing collection frequency

14. A comprehensive review of rubbish collection services conducted by Morrison Low in 2021 for Auckland Council concluded that there are four options open to councils to reduce waste tonnages through council kerbside collections.[4] These are:

    - Providing diversion services (e.g. recycling, food scraps and inorganic collections, resource recovery facilities, access to repair services).
    - Education and behaviour change approaches (e.g. community engagement, waste reduction programmes).
    - Incentivising uptake of diversion services by restricting rubbish bin or bag capacity/size.
    - Incentivising uptake of diversion services by restricting collection frequency of rubbish bins (e.g. to fortnightly collections).

15. Auckland Council has already implemented three out of four of these approaches; incentivising uptake of diversion services by restricting collection frequency of rubbish bins is the final action in this strategy.

16. Restricting collection frequency after implementation of a food waste collection is one of the recommendations WasteMINZ[5] provided to the Ministry for the Environment regarding standardising kerbside collections.[6] Many New Zealand councils have already taken this approach (refer Appendix 1) driven either by reducing waste to landfill or improving usage of their food scraps collections.[7] Other benefits of restricting frequency of collections are:

    - Greenhouse gas reductions
    - Cost savings (which are passed on to ratepayers)
    - Less traffic congestion from fewer collection truck journeys
    - Fewer bins on the kerbside at any one time because recycling and rubbish bins are placed out for collection on alternating weeks.

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[4] Morrison Low, 2021, Refuse Collection Advice: Summary of Findings: available on Auckland Council Finance and Performance Committee Agenda 8 December 2021

[5] WasteMINZ was formed in 1989, and represents small and large waste operators, materials recovery facilities, community groups, researchers, food rescue groups, local Councils, major supermarkets, tech companies, packaging producers, contaminated land specialists, consultants and many others looking to make a difference to the environment and provide input into relevant legislation and policy from central government.

[6] WasteMINZ (2020). Recommendations for standardisation of kerbside collections in Aotearoa. Report to the Ministry for the Environment.

[7] Survey of 18 NZ councils on fortnightly collections by Auckland Council in July 2024; where two thirds of the 8 respondents cited reducing waste to landfill as their primary driver, and one third cited improving the usage of their food scraps service.

6. Impacts on our 2024 Waste Plan targets

17. The kerbside waste reduction targets set out in the WMMP 2024 (refer Figure 2 below) are based on the performance standards for territorial authorities suggested by the Ministry for the Environment.[8]

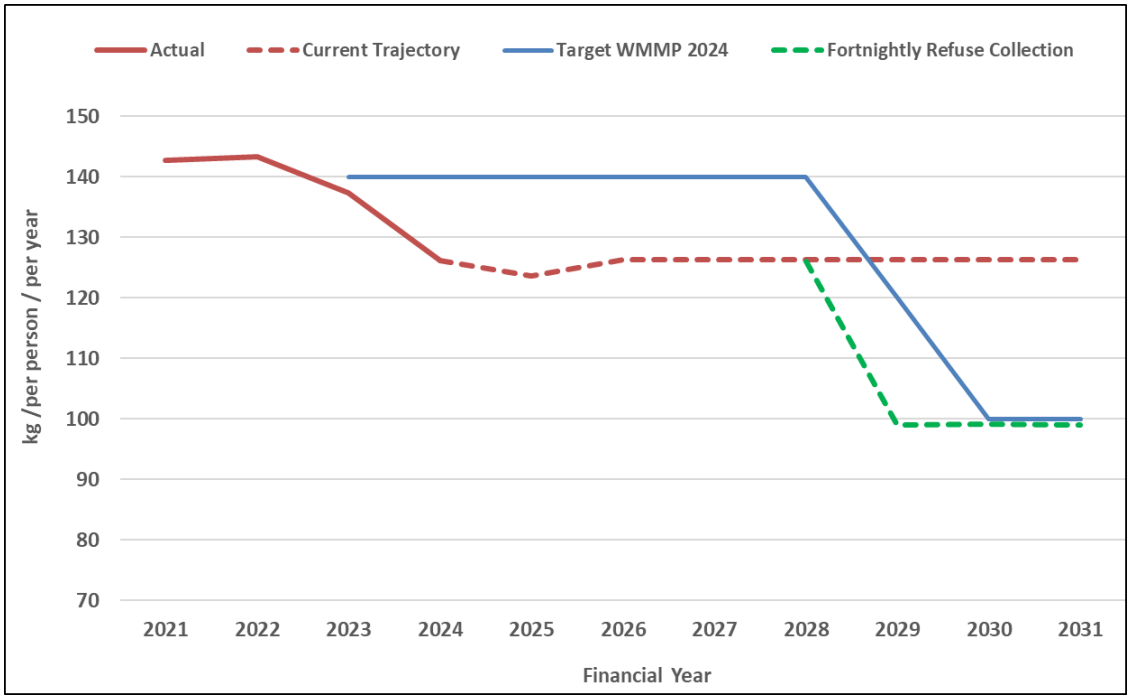


Figure 2: Auckland Council's kerbside waste reduction targets 2024

18. A fortnightly rubbish collection will enable us to reach the targets outlined in our WMMP 2024, driving much greater recovery of food waste and recycling in the region. Continuing with a weekly collection will mean that more resources are needed to encourage use of food scraps collections or composting which otherwise may decline over time without fortnightly rubbish being implemented (refer section 12).

19. As a member of C40 Cities, Auckland is committed to bold action on waste management, "accelerating the transition towards a zero waste and more regenerative future by taking ambitious, measurable and inclusive actions to reduce municipal solid waste generation and improve materials management in our cities."[9] Through C40 Cities, we have pledged to advance towards zero waste by:

[8] https://environment.govt.nz/publications/transforming-recycling-consultation-document/
[9] https://www.c40.org/accelerators/zero-waste/

- Reducing the municipal solid waste generation per capita by at least 15 per cent by 2030 compared to 2015; and
- Reducing the amount of municipal solid waste disposed to landfill and incineration by at least 50 per cent by 2030 compared to 2015 and increase the diversion rate away from landfill and incineration to at least 70 per cent by 2030.[10]

We are not on track to meet our C40 pledge which is based on household waste to landfill, and we will not fulfill our pledge if weekly rubbish collections continue.

7. Impacts on commitments and reputation

20. Auckland, as the most populous region in the country, has often been seen as a leader in waste minimisation, winning the international C40 Cities for Climate Change Zero Waste Award in 2018 and numerous WasteMINZ Awards for Excellence. For example, our food scraps collection rollout was the largest food scraps service rollout undertaken in the Southern Hemisphere. Failing to follow with fortnightly rubbish collections to ensure the success of our food scraps collections and reduce waste to landfill (refer Part 3) may impact on that reputation.

21. Eighteen other territorial authorities in New Zealand already have fortnightly rubbish collections, with some, such as Christchurch, for over 10 years. Appendix 1 lists the start date for other councils who have implemented fortnightly rubbish collections.

22. Collecting rubbish less frequently has also been common overseas for many years. A growing number of Australian councils are introducing fortnightly rubbish collections, with several states recognising fortnightly rubbish collections as best practice. Several areas across the UK have had even less frequent rubbish collections for many years, with almost half of Welsh local authorities having rubbish collections once every 3 or 4 weeks.[11]

23. Moving to fortnightly rubbish collections is a tool to drive the behaviour change we need towards correct use of existing diversion services (reducing net waste), and ultimately towards reducing generation of waste in the first place (reducing gross waste). If we don't use this tool we will need to use other tools, which may cost more and take longer to see an effect, if at all.

[10] https://www.c40.org/accelerators/zero-waste/
[11] According to information September 2024: https://myrecyclingwales.org.uk/local-authorities

Part Two: Impacts on households

8. Ability of households to cope

24. Audits of rubbish bins in legacy Manukau and Auckland City have shown us that 56 per cent of the average rubbish bin is empty, and that almost half of material (by volume) that is thrown out could be diverted from landfill (refer Figure 3 below). This includes recyclable and organic material (both food scraps and garden waste), which can be readily diverted through correct use of the other collection or drop-off services that Auckland Council provides, that the private sector provides or through other options such as composting.

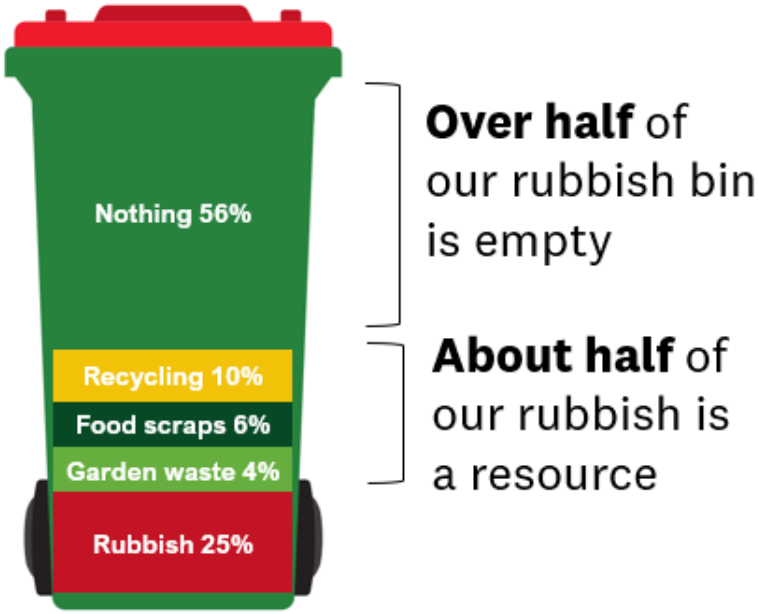


Figure 3: Average rubbish bin contents (converted to volume) in rates-funded areas of Auckland; adjusted to reflect the portion of food scraps diverted through the weekly food scraps collection service.

25. We know from our data that Aucklanders have already begun reducing their waste.[12] Figure 3 tells us that it is no longer an efficient use of ratepayer money to collect rubbish every week.

26. Our research on bins in the region showed that if recyclables and food scraps were put in the correct bins, 94 per cent of rubbish bins would be about half full or less per week. This indicates that most households would be able to cope with moving to fortnightly rubbish collections, but 6 per cent may need a larger bin if they cannot reduce their waste. Currently 88 per cent of

[12] Kerbside rubbish per person per year in Auckland decreased 21 per cent from 2010 to 2024.

households across Auckland have the standard size (120L) rubbish bin, while just 9 per cent have the larger size (240L), 9 per cent have an additional standard size (120L), and 2.9 per cent have the smaller size (80L).

27. We also know from previous changes to kerbside services in the region that placing a limit on bin capacity brings about behaviour change and reduces waste to landfill. The reduction from 240L to 120L standard rubbish bin sizes in legacy Auckland City and swapping from unlimited bags to a 120L rubbish bin in legacy Manukau City resulted in a 40 per cent reduction in recycling weight placed in the rubbish bin, and an overall reduction in rubbish weight of 35-50 per cent.

28. Experience from outside Auckland reflects a similar story; for example, Hamilton City Council staff reported that the households that struggle with the fortnightly rubbish collection in Kirikiriroa Hamilton are those that do not fully engage in separation of food scraps and recycling into their respective bins.

8.1 Under-use of the recycling service

29. An assessment of overfilled wheelie bins was undertaken by Waste Not Consulting for Auckland Council in 2009.[13] This included auditing of bins from high waste-generating households. A significant proportion of households in the areas surveyed (Glen Innes, Ōtāhuhu, Kingsland, Avondale, Sandringham and Waterview) had high proportions of dwellings with eight or more usual residents living in them. The analysis showed that, on average (by volume):
    - 37 per cent was recyclable materials accepted in the kerbside recycling bin,
    - 17 per cent was food,
    - 16 per cent was nappies and sanitary, and
    - 25 per cent was residual waste.

30. In addition, not all of these households were fully utilising the recycling service: 20 per cent of them only set out a recycling bin once during the month-long survey (effectively missing the alternate recycling collection).

8.2 Large households study

31. Auckland Council conducted a deep dive study over ten weeks with ten large households (households of 6-12 people) in the Manurewa and Papakura local board areas using a fortnightly rubbish collection.[14] The study included whānau with children in nappies, households with

[13] Assessment of overfilled wheelie bins, Waste Not Consulting 2009
[14] Household Waste Case Studies Report Final TAO, and Sunshine Yates 2022 Large Household Waste Audit Report.

people who use additional sanitary and medical waste products, households experiencing financial hardship and low-income families – communities of greatest need.

32. The study found that, although challenging to begin with, many larger households could manage with a fortnightly collection. It motivated them to use their food scraps bin and led to these households reducing their waste.

    - The average weight of rubbish dropped from 14.5kg to 9.6kg to 8.6kg per week.
    - The weight of organics (food waste) and recyclables disposed of in the rubbish bin dropped significantly – by 65 per cent and 58 per cent respectively.
    - Nappies and sanitary items stayed about the same, but none of the participants noticed any increases in smelliness due to the fortnightly collections.

33. The study also found that internal household dynamics and social pressures influenced how well families coped, and that face-to-face engagement via a trusted community organisation led to further reductions in rubbish.

8.3 Support for high waste producers – current offering

34. For those households that struggle to cope with the standard offering of kerbside bins in Auckland, we currently offer:

    - an additional (23L) food scraps bin (at no cost)
    - a larger (360L) recycling bin (at no cost)
    - an additional recycling bin, up to a maximum of 480L (at an additional targeted rate)
    - a larger (240L) rubbish bin (at a higher targeted rate).

35. In addition to these options, Auckland Council continues to support and expand alternative options for disposal and diversion of waste. This includes working with iwi, communities and businesses to provide a range of waste minimisation and resource recovery facilities and services such as the inorganic collection service and the Resource Recovery Network which give Aucklanders places to take unwanted items, alongside education and engagement.

8.4 Options to support large households by other councils

36. Five of the 18 New Zealand councils with a fortnightly rubbish service offer larger or additional residual waste bins (see Appendix 1), for example:

- Tauranga City Council moved to fortnightly rubbish collections in 2021, offering a similar 'high waste' bin bundle[15] to the current Auckland Council offering. They report that six per cent of households upsized to larger bin bundle when Tauranga City Council changed its service frequency.
- Waimate District Council offer a larger 240L bin if the household can demonstrate that they are actively using their recycling and food/organics bins. They report that uptake is low.
- Mackenzie District Council offers a full extra set of bins for a $90 administration fee, but not extra individual rubbish bins, as they do not have capacity to administer a large variety of offerings.
- Central Otago District Council allows an additional 140L residual waste bin on application. Uptake is low and largely by families with small children.
- Westland District Council offers an additional 240L bin at an extra charge.

37. Some councils offer more capacity in their other kerbside services, for example:

- Christchurch City Council doesn't offer a larger rubbish bin as commercial operators are available to handle larger waste operations and Council's policy is targeted at decreasing and diverting waste from landfill, but it is possible to upsize to a larger recycling and/or 240L organics bin.
- Dunedin City Council and Tauranga City Council both offer opt-in garden waste services.

38. Other options offered to support households with large amounts of waste include:

- Tauranga City Council allows residents to drop off recycling for free and up to four bags of residual waste for $5.50 per bag at a waste facility, although uptake is reportedly fairly low.
- Clutha District Council offers free glass drop off at its transfer station.
- Thames-Coromandel District Council offers weekly rubbish collections during peak summer periods, due to the increase in tourists.
- New Plymouth District Council provided a mechanism to allow an additional bin on a case-by-case basis, particularly for medical or sanitary waste like adult nappies.

[15] The Tauranga City Council high waste bundle includes a 240 litre rubbish bin, 240L recycle bin, 45L glass bin, and a 23L food waste bin.

8.5 Other possible options

39. Other options we could explore include further targeted communications on ways to reduce waste; working with large landlords (e.g. Kāinga Ora, Tāmaki Regeneration Company), providing additional rubbish bins, and letters for tenants to communicate needs with landlords and actions linked to specific waste streams such as nappies and medical waste (see below).

8.6 Nappies, sanitary and medical waste

40. Auckland Council's WasteWise Parenting Programme aims to educate new parents to make informed choices around consumable products associated with early childhood, with a particular focus on reusable nappies. We do this with community partners across Auckland working with parents one-on-one, in workshops, and online.

41. We also know from the experience of other jurisdictions that nappies and sanitary waste streams are manageable under fortnightly rubbish collections. A 2014 study from Lake Macquarie City Council, New South Wales, Australia measured the ability of households generating nappies and incontinence products to cope with a fortnightly rubbish collection.[16] They concluded that most households with these products will be able to manage with a fortnightly 240L rubbish bin if they sort their waste correctly, although households with three or more people who use nappies/incontinence products may need additional service options.

42. Six other NSW councils with the same bin system/collection frequency did not report an ongoing issue with disposal of nappies.

43. In Central Otago larger families with young children were given the option of an additional 140L bin or to upsize their bin after the three-month settling period. In Waimate, some concerns were raised about medical and sanitary, but were described as 'few and far between' and an 'outlier'.

44. Dunedin City Council allows an additional 140L general waste bin for residents with unavoidable waste needs, i.e. medical waste. The additional bin is supplied via application process that includes sign-off from a relevant medical professional but does not involve disclosure of private medical information.

45. While the evidence indicates that most households will cope with a fortnightly collection, we acknowledge that nappies, sanitary and medical waste are waste streams that require further options for disposal. For this reason, the waste plan includes the following actions:

[16] Community Nappy Trial Report, November 2014

- Action 4.7 - Reviewing nappies / adult sanitary product waste: *Investigate options for diverting nappies and adult sanitary products from landfill, including support for waste avoidance, collection and processing*.
- Action 12.8 – Working with healthcare and childcare sectors: *c) Advocate for health industry to seek solutions for significant medical waste streams including at-home healthcare waste.*

46. In the meantime, there are some simple things households can do to reduce and compact these waste streams such as tipping human waste down the toilet where it can go through appropriate wastewater treatment, and balling nappies tightly so they don't come open in the bin.

8.7 Extra material in rubbish bins due to national kerbside recycling standardisation

47. Changes to materials accepted in kerbside recycling were introduced across the country by the New Zealand government on 1 February 2024. The aim in standardising is to make it easier for New Zealanders to recycle right.[17]

48. In general, the excluded items already represent a lower proportion of packaging on the market (e.g. liquid paper board is used for select beverage types like alternative milks, and plastic resin codes 3,4,6,7 are used for items such as some condiment squeeze bottles, or for plastic items like toys and soft plastics). Other excluded items like lids are generally small and flat and shouldn't take up much room in the rubbish bin. The impacts of these changes are not anticipated to greatly contribute to the average household's rubbish bin capacity and ability to cope with fortnightly rubbish collections.

49. Schemes such as the Caps & Lids Recycling Scheme a voluntary, member-funded product stewardship scheme run by the Packaging Forum, are emerging to ensure as many caps and lids as possible are collected and recycled. There are already many drop off points in Auckland.

50. Part of the rationale behind standardisation is to provide brands and manufacturers with more certainty about which materials are genuinely recyclable. This could be particularly effective if more product stewardship schemes (including a container return scheme for drink containers) and regulations are introduced which put the costs of disposal onto the manufacturers and consumers, instead of councils and ratepayers.

[17] Recycle right at kerbside | Ministry for the Environment

9. Pests and Odours

51. Concern was expressed during consultation about pests and odours as a result of fortnightly rubbish collections. Pests and odours may result from food in rubbish bins, which is an incentive for people to instead use their weekly food scraps bins or other home processing units (bokashi, worm farms, compost). The council food scraps collection service has a lockable lid and accepts even difficult-to-compost materials including shellfish, bones, citrus and eggshells.

52. We also know from the experience of other jurisdictions that odour issues from nappies and sanitary waste streams are not problematic. The 2014 study from Lake Macquarie City Council (refer section 8.6 above) reported that "the trial showed that the odour of nappy bins at the end of a fortnight was no worse than the odour of regular garbage bins at the end of a week. Furthermore, odour does not significantly increase with time, nor with the amount of nappies in the bin. Wrapping soiled nappies in at least one plastic bag and keeping the bin out of the sun are both key odour management behaviours."

53. This mirrored the experience of participants in our large household study where none of the participants disposing of nappies and sanitary waste noticed any increases in smelliness due to the fortnightly collections. It is also borne out by the experiences of other councils we surveyed in New Zealand who have moved to the fortnightly collections, who advised that odour was not a problem despite concerns being expressed prior to service changes.

10. Anticipating and addressing illegal dumping

54. Council continues to both respond to and prevent illegal dumping. Council's illegal dumping response services are funded through general rates. The illegal dumping contract sum over the next five years is projected to be $1.7m – $1.8m per year. In addition, a small sum is allowed for items such as collateral, signs, security. This projection is comparable to the existing contract with increases in line with inflation.

55. Council's illegal dumping prevention services include partnering with iwi, communities and businesses to provide a range of waste minimisation and resource recovery services, from education and engagement to the inorganic service and the Resource Recovery Network which give Aucklanders places to take unwanted items (other drop-off options are listed on our website).

56. In the waste plan, Actions 11.1-11.10 specifically address litter and illegal dumping, from partnering for prevention to regulation, and continuing to expand appropriate, convenient disposal options for Aucklanders.

57. Waste Solutions will allocate appropriate additional resources as part of any fortnightly rubbish collection implementation plan, alongside targeted support and education in case of any increase in illegal dumping while households adjust to the new service.

58. We do have some experience of supporting changes to services. For example, when the legacy Manukau City area shifted from unlimited rates-funded black bags to rates-funded 120L rubbish bins in September 2017 we saw an isolated spike in illegal dumping tonnages the following summer that may have been related to the new service settling in. This was not repeated in following years. See Figure 4 below.

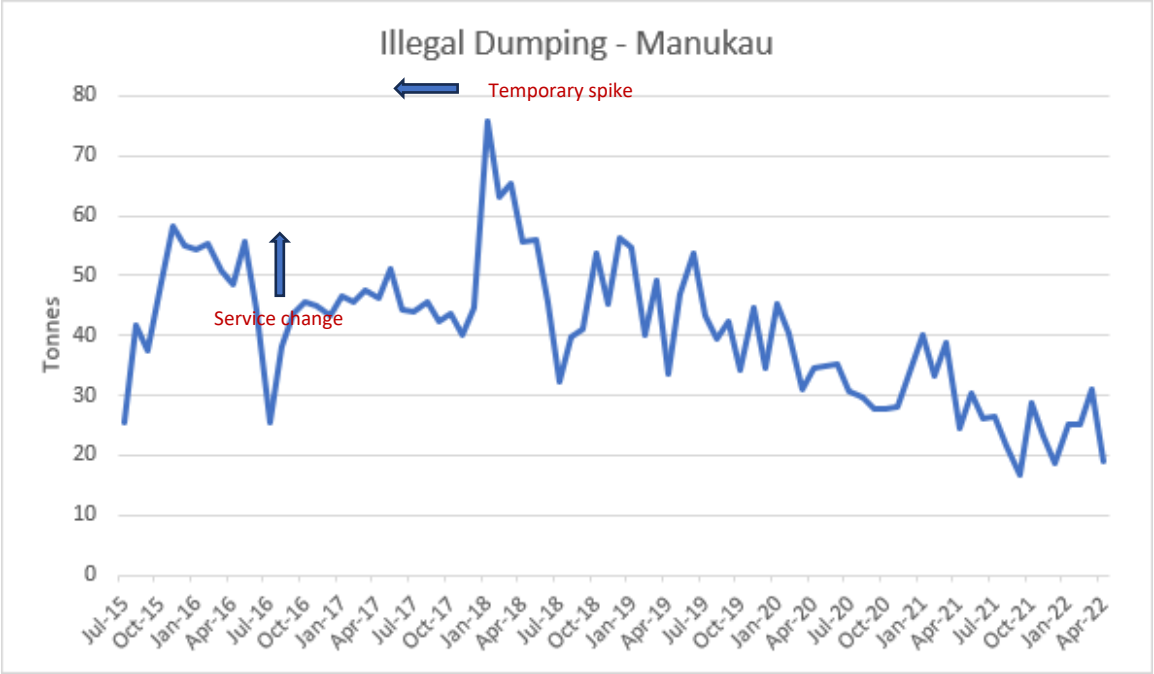


Figure 4: Illegal dumping tonnages collected from Manukau July 2015-April 2022

59. Of note, a change in rubbish collection frequency has not necessarily correlated to increases in illegal dumping in other cities. Staff from both Hamilton and Tauranga city councils reported that there was no obvious increase in illegal dumping correlated to their introductions of fortnightly rubbish collections. Likewise, in Conwy County Borough Council, Wales, the county moved to once every three weeks rubbish collections in 2016/17 and then to once every four weeks

collections in 2018/19 and no increase in illegal dumping was reported following these changes.[18]

11. Concerns about the change in service vs reality

60. We asked other New Zealand councils about the challenges they faced both prior to and during implementation. The main concerns raised were similar to those raised by Aucklanders, such as available volume, odours, pests, illegal dumping and just the change itself. Cost was also a concern to both residents and elected members. Many of these concerns were able to be overcome because the move to fortnightly refuse collections was timed to coincide with a change in all services, or at the very least the introduction of a food and/or greenwaste service.

61. We also asked councils how they addressed the challenges faced during implementation. All mentioned the need for an extensive communication campaign through a variety of methods, for example, roadshows, drop-in sessions, flyers, social and other media as well as emailed and posted communications directly to all ratepayers.

New Plymouth District Council

- The community were very concerned about change, pointing out that there would be increased illegal dumping, the bins would be smelly and that the waste bins would fill up too fast. Councillors were also concerned about these things but had made the connection between a weekly food scraps collection and fortnightly rubbish (NPDC did these changes together). The cost saving (not half but significant) for fortnightly collections was also important for accepting the change.
- NPDC had key messages, and stressed to the community that the total volume of material collected at kerbside did not change but there were just a range of different bins to put waste into. The concerns about odours were addressed with the food collection taking most smelly components from the bin. The main concern was it was a change and unknown. They essentially asked residents leading up to the service change to try the new system and then if it did not work, to call back and the council could work through any issues. While they received lots of calls prior, as soon as the service was rolled out, within two weeks, the community were into it. Only a handful (less than 5) phoned to say they needed additional bins.

[18] https://wrap.org.uk/resources/webinar/driving-recycling-and-reducing-residual-arisings-through-changes-residual-waste

Part three: Evidence that fortnightly rubbish collections will reduce waste and provide other benefits

12. Reducing rubbish collection frequency drives successful food scraps participation and diversion

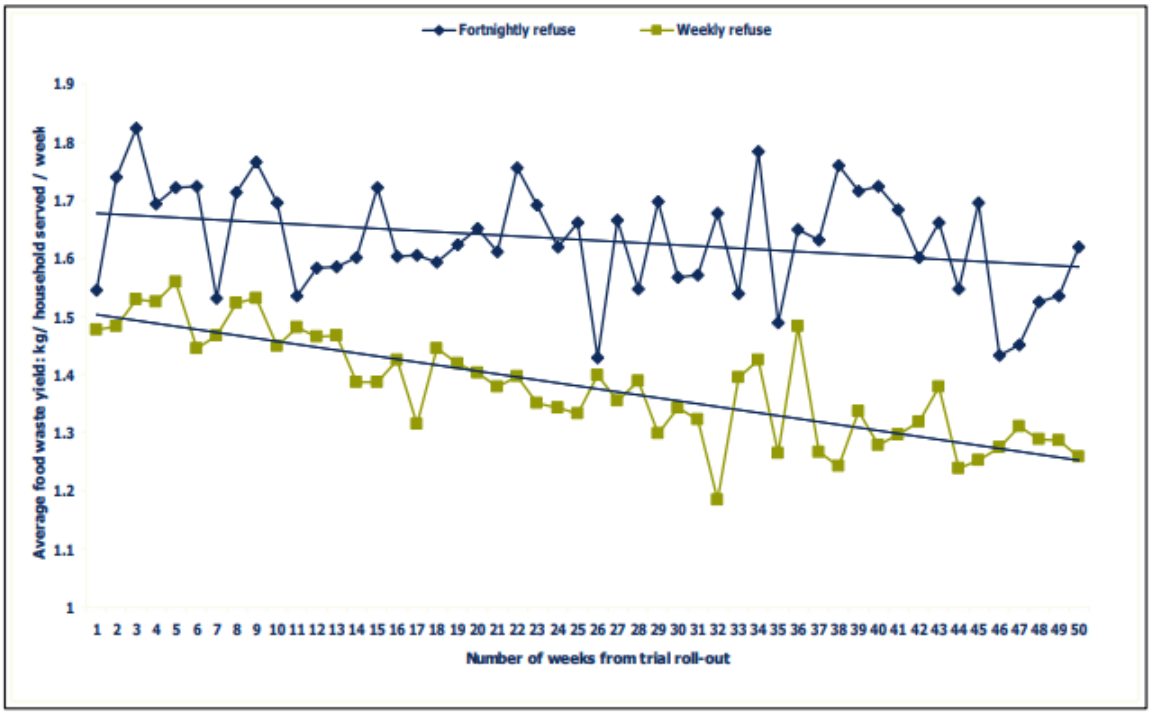
62. Auckland Council introduced its food scraps service to 475,000 households in mainland urban areas during 2023. Its purpose is to divert organic material from landfill for beneficial re-use, with consequent carbon emissions savings. The introduction of the service also puts Auckland ahead of the proposed requirements within the New Zealand Waste Strategy for councils to introduce kerbside organics diversion services.

63. Research by WRAP[19] from food scraps collection trials in the United Kingdom and Northern Ireland found that refuse collection frequency was found to be a statistically significant factor in the performance of food scraps collection service trials. They write that "…separate weekly food waste collections running alongside fortnightly refuse collections are likely to achieve 20 per cent higher yields (per household served) in comparison to weekly food waste collections running alongside weekly wheeled bin refuse collections."[20]

64. While a correlation can be seen between other factors such as deprivation level and food scraps service use, the study found that fortnightly collections increased food scraps participation and yields regardless of deprivation level, whereas those with weekly refuse collections generally experienced a steady decline in yields as the trials progressed.

65. The report noted that additional resources and interventions would be needed to avoid declining food scraps yields and participation where rubbish collections remain weekly. See Figure 5 below.

[19] WRAP is a UK-based charity, working with governments, businesses and citizens around the globe to generate evidence-based solutions that create a world in which resources are used sustainably.
[20] WRAP 2009, Evaluation of the WRAP separate food waste collection trials.



Note: Mean food waste yields across 34 rounds with fortnightly refuse collections and 27 rounds with weekly refuse collections, standardised across 50 weeks from roll-out of each respective trial included in analysis.

Figure 5: Trends in food waste yields (per household served) achieved during the WRAP supported trials – comparison of trials with fortnightly and weekly refuse collections.

66. In Auckland, we estimate that the maximum diversion tonnage per year will be 25,000 to 27,000 tonnes per year based on our current rate of participation. However, the diversion of food scraps would be 12,000 tonnes higher per year with fortnightly rubbish collections.

67. The importance of fortnightly rubbish collections in reinforcing use of food scraps bins is also seen in New Zealand. For example, in Hamilton participation in the weekly food scraps collection, where rubbish volumes are constrained to a 120-litre bin collected fortnightly, has remained high at around 55 per cent, compared with 35-40 per cent in Auckland under a weekly collection scenario, with both 120-litre and 240-litre rubbish bins available.

> ***"We have now reduced our landfill volumes by half and most of that is down to the success of the food scraps service."*** *Waste Staff, Hamilton City Council (June 2021)*

68. The majority of the 18 territorial authorities across New Zealand that have fortnightly rubbish collections also provide food scraps services (see Appendix 1). Cities like Hamilton, Tauranga, and Dunedin that have all recently transitioned introduced fortnightly rubbish collections at the same time as a food scraps service, acknowledging that these services go hand in hand.

13. Reducing rubbish collection frequency reduces kerbside waste per capita

69. Increasing diversion of food scraps from landfill is not the only benefit: reductions to overall kerbside waste to landfill may be achieved through better recycling and uptake of other waste diversion services (e.g. community recycling centres, green waste collections, electronic recycling drop-off etc).

70. Evidence from three New Zealand councils that have introduced fortnightly kerbside rubbish services alongside weekly food scraps and fortnightly recycling (or variations of the same) have achieved some impressive results. For example, Hamilton has seen a drop from 183kg to 95kg rubbish per capita since introducing fortnightly rubbish collections alongside their food scraps collection; and Tauranga has seen a drop from 187kg to 111kg rubbish per capita (See Appendix 1).

71. A comparison of UK councils that have fortnightly rubbish collections (or even once every three or four weeks) with those that do not has shown that residents put out less rubbish overall when collection frequency is reduced and also make better use of recycling and food scraps services.[21]

72. In July 2021, Copper Coast Council in South Australia moved from weekly to fortnightly rubbish collections and combined a food scraps service with their existing green waste service. Following these service changes, the city almost doubled its landfill diversion rate, from 31 per cent to 59 per cent. The Fleurieu Regional Waste Authority (covering four South Australian district councils) achieved very similar results following similar service changes introduced from 2015/2016 to 2019/2020, achieving an increase in diversion rate from 34 per cent to 58 per cent.[22]

14. Emissions and amenity benefits of a fortnightly collection

73. The estimated greenhouse gas emissions savings for Auckland when comparing weekly versus fortnightly rubbish collections are approximately 25,000 tonnes of carbon dioxide equivalent (CO2-e) per year, which is the equivalent annual emission of 10,000 average size cars. This is primarily due to increased recycling, which keeps those materials in circulation, as well as avoided fugitive emissions from organics to landfill (including food & garden waste and paper).

74. Fortnightly rubbish collection also helps avoid additional amenity and health and safety issues associated with the number of bins being placed on the kerbside every week for collection. This is increasingly important as Auckland development intensifies with many apartments and townhouses with limited kerbside space. We know from complaints received and from

[21] https://wrap.org.uk/resources/webinar/driving-recycling-and-reducing-residual-arisings-through-changes-residual-waste
[22] https://www.greenindustries.sa.gov.au/documents/GISA_Sustainable%20Kerbside%20Services_Web.pdf

discussions with the Disability Advisory Panel that bins obstructing footpaths present a problem for wheelchair users and a reduction in the number of bins out for collection is welcome.

75. We also know that traffic congestion is a concern for Auckland road-users. Rubbish/recycling trucks inevitably contribute to congestion due to their size and their frequent slowing and stopping. While Auckland Council already mitigates against this impact by collecting earlier in the morning along arterial roads, a reduction in the frequency of collections by half will mean even less congestion caused by collection trucks.

15. A comparison of weekly versus fortnightly costs

76. While the main reasons for supporting fortnightly rubbish collections are to drive the right waste minimisation behaviours and achieve carbon emissions reductions, WRAP[23] reports that "Where residual waste capacity is restricted, WRAP evidence indicates that recycling services perform better, and where frequency is reduced to fortnightly, waste services are also more cost effective to deliver."

77. The cost to deliver the kerbside rubbish service is made up of collection costs, disposal costs, and ongoing supply and maintenance of bins. Some elements of collections and disposal costs are fixed regardless of collection frequency, but others are variable, and cost savings can be made.

78. Modelling undertaken as part of the review of Auckland's kerbside rubbish charging policy in 2021 took into account cost savings anticipated from moving to fortnightly rubbish collections. This included anticipated reductions in rubbish tonnages and the need for fewer rubbish trucks; partially offset by increased food scraps and recycling tonnages. We estimated that total annual rubbish service costs would be $10.4 million less under a fortnightly rates-funded collection service compared with a weekly collection.

79. New Plymouth District Council also noted that while costs certainly weren't halved, there were still noticeable savings to their service costs.

80. The waste levy (fee on waste to landfill) increased by a further $10 to $60 per tonne on 1 July 2024, and is due to rise by a further $5 per tonne per year over the next 3 years, i.e. to $75 per tonne by 2027. Decreased tonnages to landfill as a result of fortnightly rubbish collections will offset increases in waste levy charges on rubbish disposal tonnages. By 2028, the savings in disposal costs alone is estimated to be around $5 million, of which almost half will be waste levy.

[23] WRAP (2016) The case for greater consistency in household recycling - supporting evidence and analysis. Report prepared by WRAP, Banbury

81. There could be a small additional cost associated with a shift towards a wider range of bin sizes under the fortnightly scenario, but experience from the other five New Zealand 'fortnightly councils' that offer different bin sizes is that these options are taken up by a very small percentage of overall households. For example, in Tauranga, 90 per cent of households remained on the standard bin bundle with a 120L rubbish bin while only 4 per cent of households moved to the low user bundle with a 80L rubbish bin and 6 per cent of households moved to a high user bundle with a 240L rubbish bin.

82. While the introduction of the food scraps service is expected to divert a portion of general household rubbish from landfill, specific data is not yet available to quantify the effect on the targeted rate charged to households for this service. However, we note that the standard rubbish targeted rate charge, which covers the cost of general rubbish collection and disposal, stayed almost constant from 2022/2023 ($172.89) to 2023/2024 ($172.93), despite the significant increase in waste levy imposed by central government (from $30 to $50 per tonne) on waste to landfill and the high cost of inflation we faced in general due to economic conditions at the time. This suggests that a reduction in landfill waste driven by the food scraps service has resulted in lower collection and disposal costs for rubbish collection and this has translated into a lower rubbish targeted rate charge (than otherwise would be).

16. A balance between offering customer choice and driving waste minimisation

83. From a customer perspective, lower waste producers are able to save costs in their rubbish targeted rate by choosing a smaller bin, whereas higher waste producers can have a larger bin available to meet their needs.

84. Taking all three kerbside waste services that council provides (rubbish, recycling and food scraps) and the different bin sizes as well as additional bins that are available, Aucklanders on a standard kerbside service have up to 24 different bin combinations available to them (see Appendix 2). This ranges from the smallest possible bin capacity option, which is 1x 23L food scraps bin, 1x 80L rubbish bin, 1x 120L recycling bin, to the largest possible bin capacity option, which is 2x 23L food scraps bins, 1x 240L rubbish bin, 2x 240L recycling bins.

85. To incentivise waste minimisation and diversion, our additional bin offerings are available at different price points providing a financial incentive to reduce waste. Through our food scraps and recycling collection services, we offer an additional food scraps bin at no cost and a larger recycling bin at no cost. Through our rubbish service, we offer a smaller bin at a lower targeted rate (i.e. cheaper than the standard or larger bin size rate).

86. To avoid ratepayers pre-emptively changing to a larger bin size when moving to a fortnightly collection, many councils, including most recently, Tauranga and Dunedin, started households on a standard bin and placed a hold on bin exchange requests for the first 3-6 months of the change in service. Not only does this ease the administrative burden of a new service roll out, it also encourages households to use their food scraps and recycling bins effectively, and settle into a new routine before ending up with a bin size that does not meet their needs.

Appendix 1: Data from New Zealand territorial authorities with fortnightly rubbish collections

A: Larger metropolitan territorial authorities

Council	Standard Fortnightly Rubbish service	Year started	Alternatives offered	Other Kerbside Services offered	Kerbside rubbish per person	Date of data	Kerbside rubbish per person pre-fortnightly
Hamilton *(Waikato)*	120L wheelie bin	Sept 2020	No	• 240L recycling + glass crate (fortnightly) • 23L food scraps (weekly)	95kg	2022	182kg (2013)
Tauranga *(Waikato)*	140L wheelie bin	July 2021	• 80L - Low 'bundle' (with 140L recycling) (4% of h/holds) • 240L - High 'bundle' (with 240L recycling) (6% of h/holds)	• 240L recycling + 45L glass crate (fortnightly) • 23L food scraps (weekly) • Opt in Garden waste (fortnightly / 4-weekly) • Additional food, glass and garden bins at a cost	111kg	2022	190kg (2018)
New Plymouth *(Taranaki)*	140L wheelie bin	Sept 2019	No	• 240L recycling + glass crate (fortnightly) • 23L food scraps (weekly)	90kg	2021	100kg (2018/19)[24]
Christchurch *(Canterbury)*	140L wheelie bin	2009	• 80L wheelie bin available for $97.85 exchange fee • Larger bin not available as commercial operators are available to handle larger waste operations and Council's policy is	• 80L FOGO[25] (weekly) • 240L mixed recycling (fortnightly) Can opt to pay extra for additional 240L recycling bin and upsize 80L FOGO bin to 240L bin	115kg	2020	Do not have data

[24] Based on New Plymouth District Council Waste Assessment 2023 Figure 6.5: Kerbside landfill waste collection (2016 – 2022).
[25] Food Organic and Garden Organic

Council	Standard Fortnightly Rubbish service	Year started	Alternatives offered	Other Kerbside Services offered	Kerbside rubbish per person	Date of data	Kerbside rubbish per person pre-fortnightly
			targeted at decreasing and diverting waste from landfill				
Dunedin	140L wheelie bin	July 2024	80L wheelie bin available from Feb 2025 (no change in rates on basis cost is for collections)	• 140L FOGO or 25L food scraps (weekly) (rates same for both) • 45L glass crate (fortnightly) • 240L recycling (fortnightly) • Opt-In additional 240L garden waste bin (fortnightly)	Too early for post fortnightly data	N/A	187kg (2018)

B: Smaller metropolitan / rural territorial authorities

Council	Standard Fortnightly Rubbish service	Year started	Alternatives offered	Other Kerbside Services offered	Kerbside rubbish per person	Date of data	Kerbside rubbish per person pre-fortnightly
Hauraki *(Waikato)*	140L wheelie bin *(urban areas only)*	Sept 2023	No	• 240L recycling + glass crate (fortnightly) • 25L food scraps (weekly)	43.97kg	2024	49.85kg
Matamata-Piako *(Waikato)*	120L wheelie bin	Sept 2023	No	• 240L recycling + glass crate (fortnightly) • 25L food scraps (weekly)	44.97kg	2023	47kg (2020)

Council	Standard Fortnightly Rubbish service	Year started	Alternatives offered	Other Kerbside Services offered	Kerbside rubbish per person	Date of data	Kerbside rubbish per person pre-fortnightly
Thames-Coromandel *(Waikato)*	140L wheelie bin	Sept 2023	Additional rubbish & recycling residential collections in summer peak period in some areas	• 240L recycling + glass crate (limit 2 per hh) (fortnightly) • 25L food scraps (weekly)	No data available yet	N/A	191kg (2010)
Kaikōura *(Kaikōura)*	Pre-paid bags	2022		Open bin recyclables (fortnightly) Food waste (fortnightly)	~2kg (Usage of bags is low. Most residents use transfer station)	2024	N/A
Mackenzie *(Canterbury)*	140L wheelie bin	2011	• Full extra set of bins available for an additional charge, not extra individual rubbish bin. • Extra glass crate free	• 240L recycling (fortnightly) • 45L Glass crate (weekly) • 240L FOGO (weekly)	108kg	2022	Do not have data
Timaru *(Canterbury)*	140L wheelie bin	2006	Urban CBD is weekly. Available on request by calling.	• 240L FOGO (weekly) • 240L recycling (fortnightly) • 80L glass (fortnightly) *(residents in some ownership flats have stacker crates/mini bins)*	130kg	2023	Do not have data
Waimakariri *(Canterbury)*	80 or 140L wheelie bin and bags	2019	2 sizes wheelie bin available (80L and 140L) (opt-in) fortnightly, since July 2019	• 80L/140L/240L opt-in FOGO (weekly) since July 2019	113kg	2022	147kg (2017)

Council	Standard Fortnightly Rubbish service	Year started	Alternatives offered	Other Kerbside Services offered	Kerbside rubbish per person	Date of data	Kerbside rubbish per person pre-fortnightly
				• 240L recycling (fortnightly)			
Waimate *(Canterbury)*	140L wheelie bin	2021	Upsized residual waste to 240L available only if h/hold has all four bins for diversion, and can demonstrate need.	• 240L FOGO (weekly) • 240L recycling (fortnightly) • 45L Glass crate (weekly)	112kg	2022	238kg 2017/18
Central Otago	140L wheelie bin	2014	Reduced from 240L in 2023, with new 240L FOGO* service Additional 140L bin available on application for e.g. families with nappies	• 240L FOGO (weekly) • 240L mixed recycling (fortnightly) • 240L glass (4-weekly)	168kgs	N/A	*(expected to drop with smaller bins)*
Clutha	240L wheelie bin		No additional bins allowed (extra waste can be disposed of at Mt Cooee landfill or one of council's 10 transfer stations)	• 240L recycling – no glass (fortnightly) • Free drop off for glass at landfill/transfer stations	209kgs	2022	N/A
Southland	240L wheelie bin	2011	Additional bins available for a cost of $25 admin fee and $18.32 per month per bin	240L recycling (fortnightly)	N/A	N/A	N/A
Grey *(West Coast)*	120L wheelie bin	2012	Weekly refuse and recycling collection in the CBD, along with weekly carboard collection.	• 240L recycling (fortnightly)	122kg	2023	No data

Council	Standard Fortnightly Rubbish service	Year started	Alternatives offered	Other Kerbside Services offered	Kerbside rubbish per person	Date of data	Kerbside rubbish per person pre-fortnightly
				• 45L glass collection (fortnightly, goes out on recycling week) CBD Collections: • Weekly 120L refuse • Weekly 240L recycling • Weekly 45L glass • Cardboard collection (no bin provided, placed neatly on kerbside)			
Westland ***(West Coast)***	120L wheelie bin		Additional bin available for extra charge	240L recycling (fortnightly)	N/A	N/A	116kg (West Coast region 2016)

Appendix 2: Bin combinations available to Auckland Council waste customers