

KERBSIDE COLLECTION - UPDATE ON PAY AS YOU THROW TECHNOLOGY

Department: Waste and Environmental Solutions

EXECUTIVE SUMMARY

- 1 This report updates Council on the development of Pay As You Throw technology (PAYT) as part of the 2022-23 Annual Plan process.

RECOMMENDATIONS

That the Council:

- a) **Notes** the report 'Kerbside collection – update on pay as you throw technology'.

BACKGROUND

- 2 During the 10 year plan 2021-31 meeting of Wednesday 27 January 2021, Council considered a report from Waste and Environmental Solutions outlining funding options for future kerbside collection services. At that meeting Council resolved to adopt targeted rates funding for kerbside collection bins, plus an opt-in garden waste bin funded via fees and charges, as the preferred funding source to be used for delivering kerbside collection services (CNL/2021/017).

- 3 Council also requested that staff provide two additional reports:

Moved (Mayor Aaron Hawkins/Cr Christine Garey):

That the Council:

- a) **Requests**, in time for the next Annual Plan 2022-23, a report outlining options for both flat and progressive targeted rates for the kerbside collection service.
- b) **Ask** staff to report back on the development of Pay as You Throw technology, as part of each Annual Plan process.

Motion carried (CNL/2021/018)

- 4 This report responds to part (b) and provides an update on the development of PAYT technology.

DISCUSSION

- 5 In the 10 year plan 2021-31 report 'Kerbside Collection Funding Options' staff identified PAYT as an alternative funding option that could be applied to general waste or green waste kerbside collections. This option would allow residents to only pay for bin collections when needed.

- 6 As PAYT had not been proven at scale in New Zealand this option was not recommended due to uncertainty over the costs and practicality of implementation. The report identified that developments in technology may make the implementation of a PAYT system possible in the future.
- 7 PAYT can be seen as a method to incentivise reducing household waste, which aligns with the objectives in the DCC Waste Minimisation and Management Plan 2020.
- 8 Alternatively, PAYT can be seen as penalising larger or lower-income families with less ability to change their purchasing habits, and may encourage cost avoidance behaviour such as increased illegal dumping.
- 9 There are currently two PAYT options available for kerbside collection bins. These are:
 - a) Automated Radio Frequency Identification (RFID) tags which allow a collection vehicle to identify each bin during collection. This information is then used to determine the associated property for billing purposes, and;
 - b) Prepaid tags that are attached to a bin when it is placed at the kerbside for collection. These tags are then removed during the collection process.
- 10 RFID tags are widely used in several countries to identify bins and verify that bins have been collected; however, due to a relatively high error rate (10 – 15%) of identifying and/or validating the RFID tag, they are currently not commonly used as a method of charging for services. As such, a PAYT system is currently likely to involve a prepaid tag or similar prepaid system to cover the cost of collection and disposal.
- 11 In August 2020, the Ministry for the Environment (MfE) released a report titled 'Recommendations for standardisation of kerbside collections in Aotearoa'. This report includes a recommendation that:
 - Rates funded refuse collections, or the use of bylaws to limit the provision of 240-litre wheelie bins by the private sector, is shown to reduce residual rubbish and reduce contamination in recycling.

The Auckland Council Experience

- 12 In researching for this report, staff contacted Auckland Council who were undertaking a detailed analysis of funding options for kerbside collection services, including PAYT.
- 13 Due to amalgamation in 2010, Auckland was unique in having a rates funded refuse service covering approximately 55% of the city, with a mixture of PAYT options covering the remaining 45%. This situation has allowed Auckland Council to directly compare these funding options side by side, including a trial of automated RFID technology.
- 14 The PAYT options used in Auckland City are:
 - a) Pre-paid plastic bags
 - b) Prepaid tags on kerbside bins
 - c) Automated RFID tags on kerbside bins

- 15 The Auckland Council Waste Management and Minimisation Plan 2018 committed to implementing a region wide PAYT charging system across Auckland. The commitment was based on international evidence, which at the time indicated a 'polluter-pays' system would drive greater household waste minimisation behaviour and create a financial incentive to save money by reducing waste.
- 16 Auckland Council has subsequently evaluated the advantages and disadvantages of both rates funded and PAYT kerbside collection services. A report on the results of this evaluation was presented to their Finance and Performance Committee on 8 December 2021 (https://infocouncil.aucklandcouncil.govt.nz/Open/2021/12/FIN_20211208_AGN_10873_AT_E_XTRA_WEB.htm, item 12, 'Annual Budget 2022/2023: Kerbside refuse charging policy review'). The executive summary of the Auckland Council evaluation is included with this report as Attachment A.
- 17 The report compared three funding options for kerbside refuse collections:
 - a) region wide PAYT
 - b) region wide rates-funded
 - c) continuation of the hybrid model (PAYT and rates-funded services).
- 18 Contrary to expectations, the Auckland Council analysis found no significant difference in refuse volumes between PAYT areas and rates funded areas of the city. The results also indicated that limiting the volume available for general waste is more effective than different funding methodologies for reducing waste volumes. The analysis also included a review of refuse per capita across other New Zealand territorial authorities, which also showed little correlation between waste volumes and funding methods.
- 19 The Auckland Council report also cites evidence from other NZ cities and overseas that shows that positive waste minimisation outcomes can be more effectively achieved by focussing on:
 - increasing access to diversion services
 - community education programmes
 - reducing the bin volume or collection frequency for refuse to encourage the use of diversion services
- 20 Following the analysis of funding options for kerbside collection, the Auckland Council approved public consultation during 2022/2023 Annual Plan to move all of the Auckland region to a rate funded refuse collection service.
- 21 The primary findings in support of this approach were that a rates-funded service:
 - achieves the best waste minimisation outcomes, as it enables greater influence over the domestic waste stream
 - is the most cost-effective, lowest risk, and most financially resilient for the Council to deliver

- provides Auckland Council with the greatest opportunity to respond to the climate emergency and meet the commitments set out in Auckland's Climate Plan by reducing and mitigating emissions
- delivers the greatest certainty for Aucklanders by enabling Auckland Council to provide a universally available, equitably priced service across the region regardless of location or income.

Application of the Auckland Experience to Dunedin

- 22 The kerbside collections approach adopted by Council is strongly aligned to the Auckland experience, which concluded that limiting the volume available for general waste and increasing access to diversion services supports improved waste minimisation outcomes.
- 23 The new kerbside services for Dunedin include a limitation on the size and frequency of kerbside waste bins (140 Litre bin collected fortnightly), plus the addition of a food waste container that is collected weekly, for food waste to be beneficially reused as compost.
- 24 The DCC Waste Minimisation and Management Plan 2020 and the Waste Futures programme, aims to increase the scope and availability of waste diversion services through expanding resource recovery infrastructure. This includes the development of a modern Resource Recovery Park at Green Island Transfer Station, including the development of a construction and demolition waste sorting facility.
- 25 These new services and facilities will be supported by increased education campaigns to ensure residents are aware of the methods and services available to them for reducing household waste.
- 26 Based on the Auckland experience and their analysis, staff believe that Dunedin's expanded kerbside collection service will deliver a cost effective and equitable service and achieve Council's strategic objectives from the Waste Minimisation and Management Plan of enabling recycling and resource recovery, and reducing waste to landfill. The Waste Futures programme will also help reduce Council's net carbon emissions from waste to zero by 2030.
- 27 The recent Auckland experience has demonstrated that a PAYT system is unlikely to help achieve Council's strategic objectives, will lead to higher costs, may create social inequity, and is unlikely to affect waste minimisation objectives. For these reasons staff do not recommend any further investigation of PAYT at this time.

OPTIONS

- 28 As this is an update report, no options are presented.

NEXT STEPS


- 29 Development of additional waste diversion options and facilities via the Waste Futures programme will continue to be progressed.
- 30 The procurement of increased levels of service for kerbside collections (Four Bins plus one – separate food and green waste collection) will continue.

- 31 Staff will consider a range of options that may deliver broader waste minimisation outcomes, including regulatory tools, which could be included in a future Waste Minimisation and Management Plan and/or Bylaw.
- 32 Staff will continue to monitor any developments in PAYT technology and will report back to Council if this becomes a practicable option aligned to Council's strategic goals.

Signatories

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Attachments

	Title	Page
A	Exective Summary: Auckland Council Refuse Collection Advise	98

SUMMARY OF CONSIDERATIONS

Fit with purpose of Local Government

This decision enables democratic local decision making and action by, and on behalf of communities. This decision promotes the economic well-being of communities in the present and for the future.

Fit with strategic framework

	Contributes	Detracts	Not applicable
Social Wellbeing Strategy	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Economic Development Strategy	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environment Strategy	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Arts and Culture Strategy	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3 Waters Strategy	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Spatial Plan	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Integrated Transport Strategy	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks and Recreation Strategy	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other strategic projects/policies/plans	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The increased levels of service for kerbside collections contributes to the Environment Strategy by ensuring effective reduction and management of solid waste to achieve the goals set out in its Waste Management and Minimisation Plan, with appropriate regard given to the goals of the Emissions Management and Reduction Plan.

Māori Impact Statement

Mana Whenua as a stakeholder have been engaged during the Better Business Case options development phase of the Waste Futures project, which supports Council's broader waste minimisation goals. No specific discussions have been held on PAYT.

Sustainability

Based on the Auckland experience, Council's waste minimisation objectives are aligned with increasing the facilities and opportunities available for waste diversion, alongside reducing the volume available for disposal of residual waste, rather than PAYT.

LTP/Annual Plan / Financial Strategy /Infrastructure Strategy

Resource recovery and waste diversion activities to support the Council's Waste Minimisation and Management Plan, and the preferred kerbside collection option, are included in the 10 year plan 2021–31.

Financial considerations

The capital expenditure requirements for resource recovery and waste diversion facilities to support the Council's Waste Minimisation and Management Plan, and the preferred kerbside collection options, are included in the capital budgets in the 10 year plan 2021–31.

Significance

The decision is considered low in terms of the Council's Significance and Engagement Policy.

SUMMARY OF CONSIDERATIONS

Engagement – external

The General Manager, Waste Solutions, Auckland City Council was engaged during the research and preparation of this report.

Engagement - internal

Waste minimisation objectives are regularly discussed with a broad number of internal departments, including Finance, Policy, Property, 3 Waters, and Transport.

Risks: Legal / Health and Safety etc.

There are no known risks.

Conflict of Interest

There are no known conflicts of interest.

Community Boards

Community Boards have a high degree of interest in how waste minimisation activities are undertaken, including how Council will fund kerbside collection services.



Document status

Job #	Version	Approving Director	Date
2615	Draft	Ewen Skinner – Final of interim report	28 May 2021
2615	Final Draft	Ewen Skinner	17 September 2021
2615	Final	Ewen Skinner	17 November 2021

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1 Executive summary

This strategic review summarises a comparative analysis of three different refuse collection payment options based on a number of criteria designed to include all different aspects of the refuse collection service and its impact on Council, customers and the environment. The three payment options are broadly based around Council's current preferred user pays (Pay As You Throw – "PAYT") strategy, the existing hybrid status quo and a fully rates-funded service.

Council's preference for PAYT was initially identified in the 2012 Waste Management and Minimisation Plan (WMMP) with waste minimisation being the primary driver. Since then, more information has become available about the effectiveness of PAYT, particularly in the context of the NZ situation, and the complementary services that Council has rolled out. This review examines the evidence currently available to assess whether PAYT is still the best solution for achieving Council's outcomes.

The NZ-based and international case studies, and the investigations commissioned by Council as part of this review demonstrate the following:

- **PAYT is not the only pathway to waste minimisation:** With any charging methodology, waste minimisation requires easy access to services that divert waste away from landfill (such as the recycling and food scraps collection services), good community education programmes and reduced access to refuse volume to encourage use of the diversion services.
- **PAYT has not resulted in lower refuse volumes in comparable areas in Auckland:** A Colmar Brunton survey conducted amongst owners and renters in Auckland in 2021 found that the current financial savings from PAYT are not strong enough motivation to reduce waste. This is consistent with a 2021 study carried out in Auckland by WasteNot Consulting (ref 13)¹, which found no clear evidence that PAYT areas of Auckland produce less refuse than the rates-funded areas on a per capita basis. The current price does not appear to be a sufficient economic driver to motivate behaviour change in households.
- **NZ refuse collection markets operate differently to those overseas, which affects the way we deliver refuse services:** NZ is quite unique in allowing side-by-side competition with the Council service in the residential kerbside refuse collection market. This impacts the way PAYT operates in NZ and introduces a number of challenges not experienced overseas. The most common service offering from private collection contractors in NZ is a subscription model, which delivers an annual service for a fixed price, similar to a rates-funded collection. Private services also offer large bin sizes at competitive rates. So, where Council provides a PAYT-model, private offerings can undermine Council's initiatives to increase the use of diversion services by reducing Council's influence over available refuse volumes.
- **PAYT is likely to be more expensive, both for Council and for Auckland overall:** Financial modelling carried out by Eunomia Consulting (ref 16) shows that PAYT is less cost effective than rates-funded solutions because of more complex systems, duplication of workloads by multiple suppliers and Council's requirement to provide services to properties with access issues that make them uneconomical for private collectors. Auckland Council's own financial modelling presents a similar picture, as the cost per property goes up for households utilising either Council or private collections as households opt out of the Council service, resulting in an overall increase in total cost to the

¹ References relate to the table in Appendix B, where sources and key points are explained.

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community. This is consistent with PAYT tender prices being higher than rates-funded solutions in recent procurement processes in NZ.

- **PAYT comes with higher financial risks for Council:** The financial viability of Council's PAYT system and ongoing influence over customer waste reduction behaviour relies on Council maintaining enough customers to spread the cost of service delivery equitably, and maintain a service that is affordable. This restricts Council's ability to incentivise waste minimisation through reducing available refuse volume and/or increasing refuse collection prices in a competitive environment.

The preferred option recommended by this review is a rates-funded refuse collection service. The rates-funded option is predicted to have better outcomes across:

- **Waste Minimisation** – Due to Council's increased number of customers from being the first-choice provider and therefore having greater influence over receptacle sizes and collection frequencies. By influencing the refuse service, Council can encourage the use of the diversion services.
- **Cost Effectiveness** – With a rates-funded model the cost to customers is lower, including both costs paid to Council and to private services, because the economies of scale allow the Council to service more properties at a lower overall cost, including properties that are difficult to access. With the introduction of an 80L bin at a lower price point, even low waste producers are not expected to pay more for a rates-funded service than for a PAYT service. Customers are less likely to engage a private collection service over and above the Council service without exhausting all the Council services available to them first, though inevitably a small portion will choose to do so. With a rates-funded model Council has greater income certainty for planning purposes, lower administration costs and there is no need for a complex billing system.
- **Access/Equity** – All customers are offered the same service for the same price, regardless of where they live and the ability to spread costs over a wider customer base makes the service more affordable for all Aucklanders.
- **Climate change** – Less waste going to landfill also results in less emissions from landfills in the future. Each street has a single refuse collection day and is serviced by a single collection truck, there are less trucks required to deliver the refuse collection service and therefore less emissions.
- **Health and safety/Amenity** – Due to fewer truck movements required to provide the same service in residential areas, and less days with bins sitting out on footpaths creating pedestrian obstacles.

With the initiatives already in place and proposed by Council to reduce refuse, the implementation of city-wide PAYT services is unlikely to produce further waste minimisation that justifies its increased costs and the environmental impacts of increased truck movements from multiple providers. Further, it risks undermining Council's waste minimisation initiatives as customers can easily choose not to divert waste by paying for a larger private collection service. Currently, Council has minimal influence over the price or availability of refuse collections in a side-by-side competitive environment where private operators currently have no legislated responsibility to achieve waste minimisation targets.