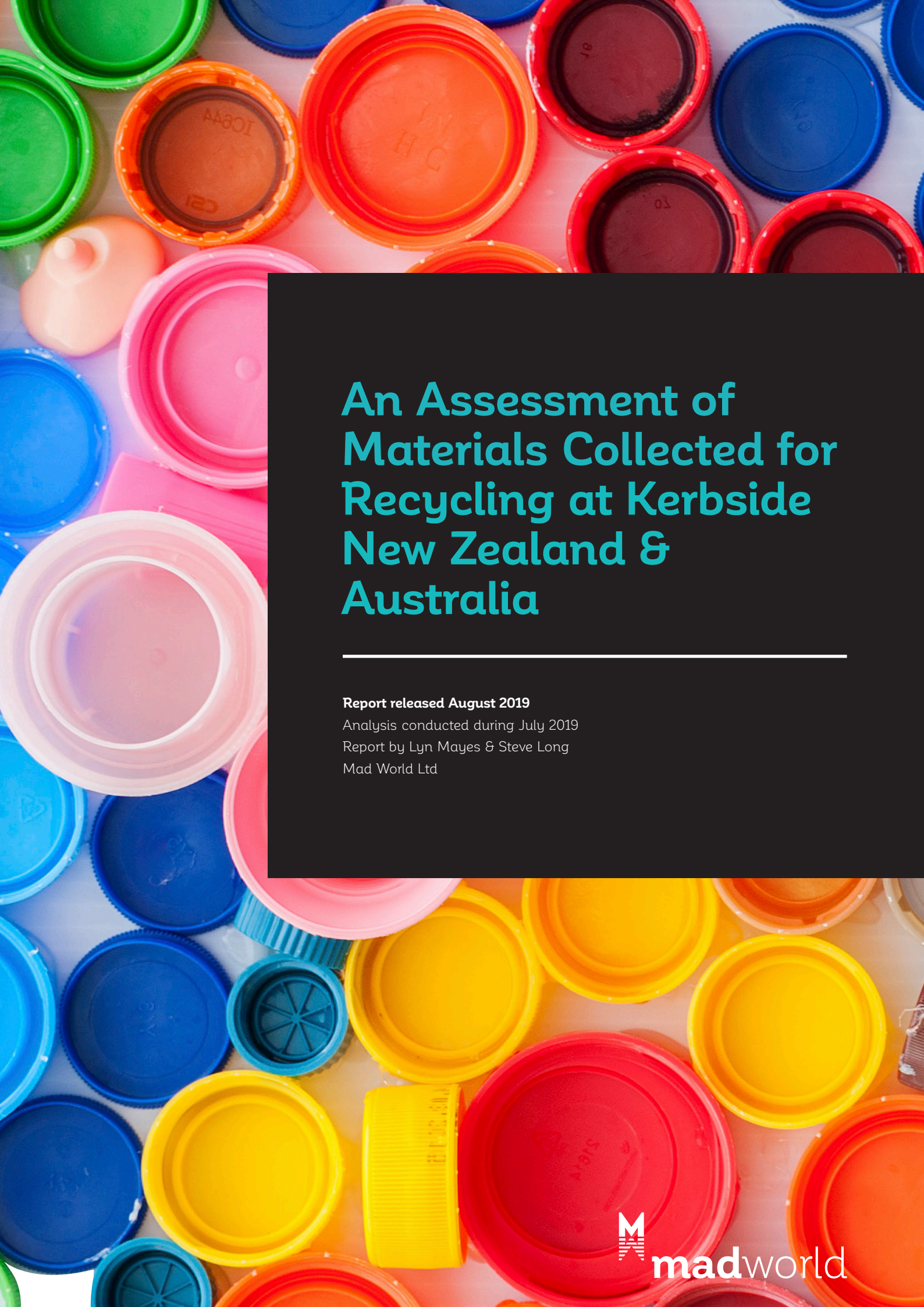


An Assessment of Materials Collected for Recycling at Kerbside New Zealand & Australia

Report released August 2019
Analysis conducted during July 2019
Report by Lyn Mayes & Steve Long
Mad World Ltd

madworld

Background to this report

A frequent question by brand owners is whether packaging is recyclable or compostable in New Zealand. The rule of thumb has traditionally been that if over 70 per cent of the population has access to a recycling service for a particular product, then it can be labelled as "recyclable". In Australia the *Sustainable Packaging Guidelines* set this bar at 80 per cent.

With the commitment by many New Zealand brands, retailers and manufacturers to using 100 per cent reusable, recyclable or compostable packaging in their New Zealand operations by 2025 or earlier, we have been asked by several clients and companies about the level of acceptance by council collections for packaging types around the country.

We have written this report to provide an analysis of the range of recyclable packaging materials that different councils throughout New Zealand and Australia will accept. This research is based on information provided to consumers and householders on council websites. This research was conducted during July and is based on available website information at that time. High level results of the research are provided across all major material types including plastics, paper, metals and organics. The report also outlines details on the general acceptance criteria, standard rejection issues, and outlines current trends in the recycling industry.

As part of this study, we assessed the information available on 67 New Zealand council websites and selected a similar number of councils in Australia, with representation across New South Wales, Victoria, Queensland, Northern Territories, South Australia, Western Australia and Tasmania to provide a point of comparison (See Appendix 1).

Current recycling situation and trends

The sustainability of packaging is receiving significant attention, with widespread concern from the public and governments over resource use and impacts on the environment from mismanaged post-consumer material. International and national research shows that consumers are displaying an increasing preference and develop stronger loyalty with brands that use recycled or sustainable content in their packaging. Many countries, including New Zealand, are beginning to adopt the principles of the circular economy. This emerging framework seeks to shift away from linear approaches (take-make-dispose), by establishing an economy that is restorative and regenerative by design, which designs out waste and keeps materials at their highest utility and value at all times.

The majority of New Zealanders have access to kerbside or community drop off recycling. While recycling is a voluntary action, the separation of recyclables by householders and consumers is a critical step in ensuring that material flows are of the highest quality. However, international research shows that a major barrier to public participation is a lack of understanding and confusion over the recyclability of the different materials that are used in packaging. This is exacerbated by the variations to collection services across New Zealand, with differences across council jurisdictions over the types of materials that can be recycled and how packaging should be presented (e.g. lids removed, squashed, rinsed etc).

The government is seeking ways to improve the consistency and quality of recycling across New Zealand. However, this will likely be a significant challenge due to the multitude of individual council contracts for service provision and the specific circumstances in each area. The high level of innovation and increasing introduction of new packaging materials (e.g. compostable and bioplastics) will also mean that the situation will never be static. Collection services need to be in place for these new packaging types to be a credible alternative to traditional materials. As such, collection services will need to constantly evolve or new ways of working between manufacturers and government will be required.

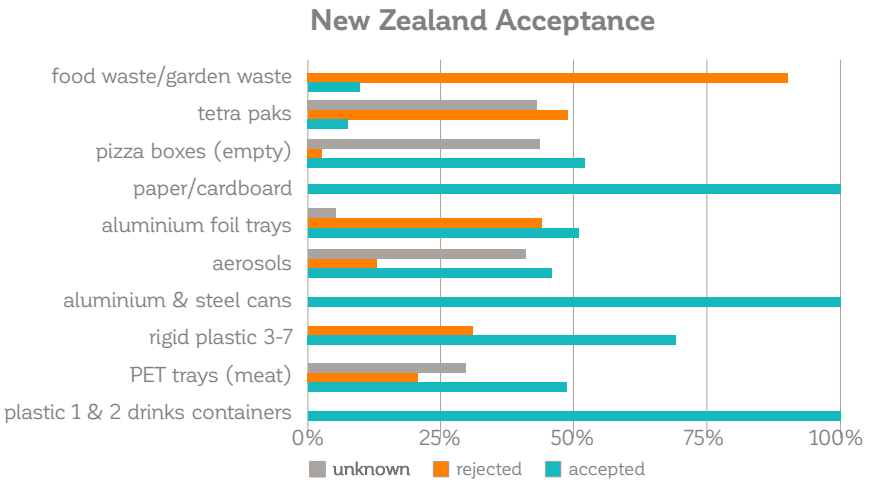
The decision by China and other Asian countries to cease taking other country's waste products, particularly mixed plastics (3-7) and mixed papers, has had a major impact on the recyclability of packaging containers in New Zealand and Australia. As in many other developed countries, this reliance on exports of waste to Asia has hindered investment and development in domestic reprocessing. Higher quality requirements in material streams and the low value in these commodities is making sorting and recycling an even more operationally and economically challenging business.

Acceptance

The only materials that are 100 per cent accepted at all collections throughout New Zealand are plastics number 1 and 2 (PET and HDPE), paper, and aluminium and steel cans. Glass bottles and jars are also collected throughout NZ and information on glass recycling can be found on glassforum.org.nz.

Packaging Type	NZ Acceptability
Plastics	
Plastic bottles (numbers 1 & 2 [PET/HDPE])	100%
Meat trays (number 1 [PET])	49%
Rigid plastics (numbers 3-7)	69%
Metals	
Aluminium & steel cans	100%
Aluminium aerosols	46%
Aluminium foil trays	51%
Paper	
General paper & cardboard	100%
Pizza boxes	52%
Tetra paks (milk/juice)	8%
Organics	
Food waste	10%
Garden waste	10%

The information on acceptance was obtained from researching council websites. Acceptance levels may be higher but information is not available to substantiate this on the website. Percentages are calculated only where kerbside recycling is offered. Many councils do not provide clear information on whether particular products are recyclable (e.g. aluminium aerosols, pizza boxes, meat trays), which can make separation of packaging challenging for householders and consumers. The following chart summarises this information.



Comparison with Australia

New Zealand has an average acceptance rate of 64 per cent across all materials (excluding organics), while Australia's acceptance rate is higher at 89 per cent. This means that in New Zealand only plastic bottles, aluminium and steel cans, paper and cardboard and glass bottles meet the 70 per cent rule of thumb in respect to recyclability and access to collection schemes. In Australia seven packaging types meet the 80 per cent threshold.

	NEW ZEALAND				AUSTRALIA			
	Accepted	Rejected	Unknown	NZ Standard	Accepted	Rejected	Unknown	Australian Standard
Plastic bottles # 1&2	100%	0%	0%	★	100%	0%	0%	★
PET (#1) meat trays	49%	21%	31%		58%	28%	14%	
Rigid plastics #3-7	69%	31%	0%		90%	4%	6%	★
Aluminium & steel cans	100%	0%	0%	★	100%	0%	0%	★
Aluminium aerosols	46%	13%	41%		96%	4%	0%	★
Aluminium foil trays	51%	44%	5%		76%	12%	12%	
Paper & cardboard	100%	0%	0%	★	100%	0%	0%	★
Pizza boxes	52%	3%	44%		96%	0%	4%	★
Tetra paks (milk/juice)	8%	49%	43%		86%	12%	2%	★
Food organic & garden organic	N/A	N/A	N/A		28%	72%	0%	
Food waste (food organic)	10%	90%	0%					
Garden waste (garden organic)	10%	90%	0%		28%	72%	0%	

Acceptance levels may be higher but information is not available to substantiate this on the website. Note: For glass collections – see Glass Packaging Forum (glassforum.org.nz) for information.

Summary and trends

Material	Explanation
PET (#1) Meat trays	PET meat trays are recyclable and rPET trays are manufactured in NZ from waste PET. However, PVC meat trays are still being used and these cannot be separated from PET/rPET without optical sorters. This means that many councils/recyclers will not accept meat trays.
Rigid plastics #3-7	The number of councils accepting these materials is reducing and is likely to reduce further. Some councils do not specify rigid plastics but only note the resin numbers. This can lead to contamination of rigid streams with soft plastics.
Aluminium aerosols (empty)	Empty aerosols are widely accepted across Australia (96 per cent) but only 46 per cent of NZ councils say they accept aerosols. Many councils do not provide specific details on aerosols.
Aluminium foil trays	The main reason provided by councils for not accepting foil trays is food contamination. However, other food packaging (food cans, pizza boxes) are accepted if food is removed so foil trays could be collected on same basis. In Australia, consumers are asked to scrunch aluminium foil trays into a large ball, so these are picked up in the sortation process.

Pizza boxes (empty)	There is a lack of clarity about the acceptance of this widely used packaging. Although. councils offering a compost service often accept pizza boxes for collection.
Tetra paks (milk/juice)	Very few NZ councils accept tetra paks, compared to the majority of councils in Australia. However, a number of Australian councils are now making a distinction between fresh milk cartons which they do accept (no foil inner) and UHT/long life milk cartons (with foil liner) that they do not accept.
Organics collections	Collection is in its infancy in NZ. Schemes that exist usually collect food and garden waste separately. There is a move in Australia towards Food Organic and Garden Organic (FOGO) collection services. Compostable packaging is not collected with any organic kerbside collection service.

General issues with acceptance

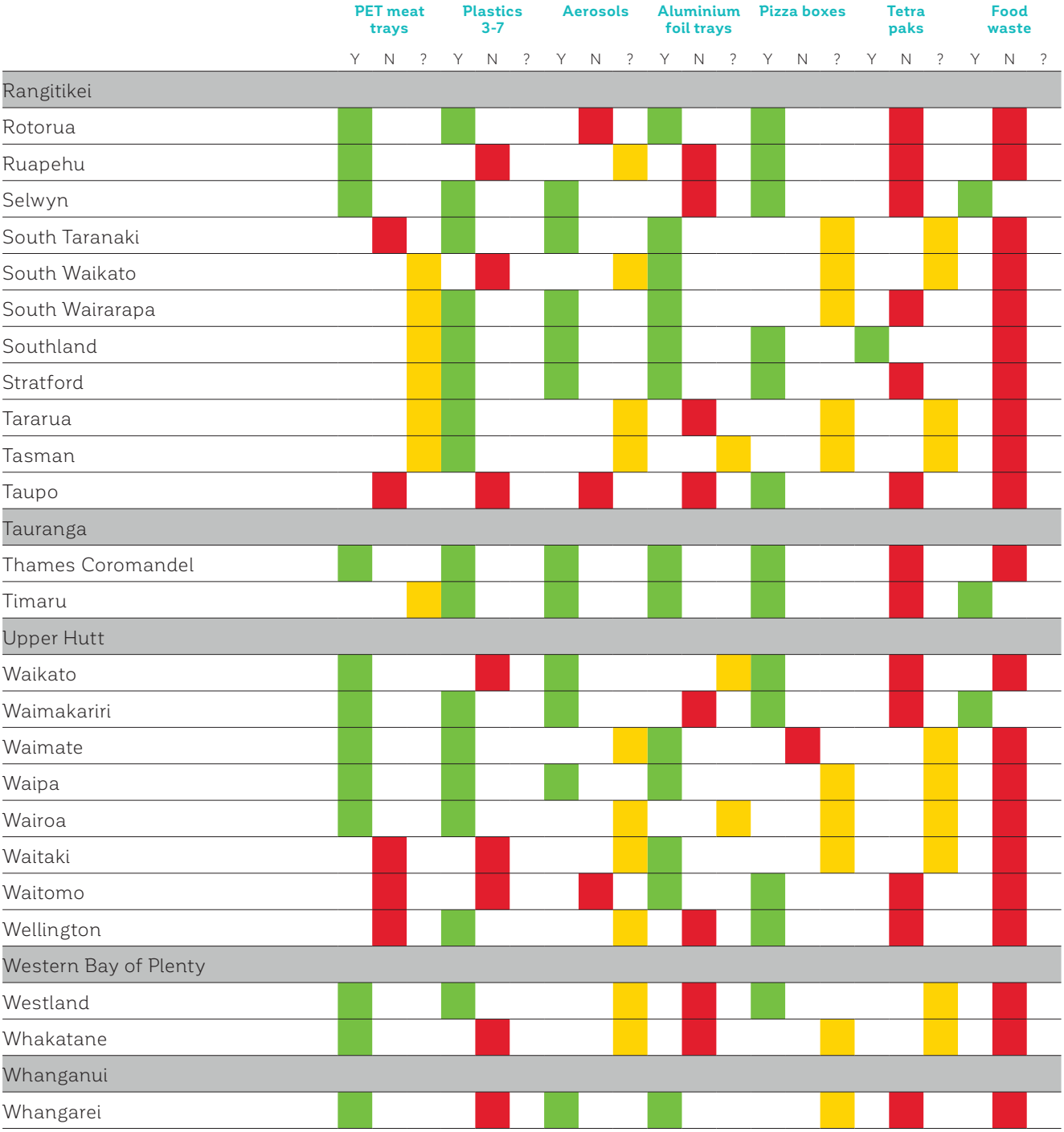
There are a number of reasons why individual councils only accept certain material types, which may include contractual arrangements, costs, logistics and distance to processors and markets.

The general issues raised include:

- **Contamination:** packaging may still contain food residue and other contaminants, which make the sortation of materials unpleasant and may compromise the recycling process.
- **Sorting challenges:** the diversity of packaging materials makes identification and separation a challenge. This is particularly the case with multi-layered packaging, which may cause automatic scanners to reject material or may result in incorrect sorting. The latter may result in contamination of individual material streams and the blocking up of sorting lines.
- **Coloured plastics:** generally, polymers and different coloured plastics are not compatible with each other during the recycling process. Plastics coloured with black pigment cannot be identified by standard optical scanners, even if the actual plastic is recyclable.
- **Prices of material:** markets, both international and domestic, are still available for a range of waste packaging. However, prices for many materials are extremely low and New Zealand sorters are typically having to pick up ancillary costs such as baling and transport, making it cost neutral or even negative.
- **Quality:** China's new policies and increasingly those of other countries are requiring waste material streams to have extremely low levels of contamination.

For recycling to be economically and operationally viable the entire process needs to operate efficiently and have minimum levels of contamination and non-target material. The presence of unusable packaging adds to costs throughout the supply chain, results in a loss of saleable recyclable material, reduced yields, and leads to additional requirements for disposal.

Summary by New Zealand Council[1]



1 Analysis of information available July 2019. Mad World Ltd does not accept any responsibility whether in contract, tort, equity or otherwise for any action taken, or reliance placed on it, or for any error or omission from this report.

Further information

For further information on the specific details of this research please contact Mad World Ltd. Mad World was established in 2001 and helps businesses grow to become more sustainable, particularly in the areas of packaging waste management and product recycling. We have managed high-profile national projects associated with the development of domestic recycling systems and infrastructure.

Since the creation of the Waste Minimisation Fund in 2009, Mad World has successfully helped clients obtain finance from the government, securing nearly $20 million in project support. We help brands, manufacturers, retailers and recyclers in a range of areas including:

- Business planning
- Finance and funding acquisition
- Marketing
- Communications
- Government liaison
- Project management

Who is Mad World?

Lyn Mayes

Lyn's early career was in supply chain management, before moving into managing M&A and then finally focusing on corporate communications. Her commitment to sustainable business practices was initially inspired by working with BOC to find alternative fuels for its vehicle fleet, which was the second largest in the UK. This passion continued at Kimberly-Clark where, as corporate communications director (EMEA), Lyn introduced sustainability as a key performance indicator. Lyn is chair of the government appointed Auckland Conservation Board, which represents the Auckland community and has several statutory roles including to ensure the delivery of the Auckland Conservation Management Strategy.

Steve Long

Steve has over 20 years' experience working in the environmental sector in a range of global locations. Steve worked for ten years at the NZ Ministry for the Environment across a variety of roles, including private secretary to the Minister, advisor to the CEO on organisational development, manager of the Communications Directorate, and as manager of the Funds Management Team. In this latter role he was responsible for the environmental grants programme, including the Waste Minimisation Fund. Steve is adept in developing engagement between government and industry. He has just completed an MBA, with a specific focus on the circular economy. This included a final management project entitled "Developing quality material flows in the supply chain for plastic packaging recycling in New Zealand" (this report is available on request). For the past five years Steve has worked as a consultant for businesses and international organizations on a range of commercial and development projects. A large amount of his current work is in South-East Asia and Africa, as well as New Zealand.

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Appendix 1

Australian Councils included in Assessment

NSW

Albury City Council
Bathurst Regional Council
(includes Evans Shire)
Cambeltown City Council
Canterbury Bankstown Council
Lismore City Council
Maitland City Council
Newcastle Council
Penrith Council
Port Macquarie Council
Sydney Council
Tamworth Regional Council
(comprises 13 councils)
Wollongong City Council

QSL

Brisbane City Council
Bundaberg Regional Council
Cairns Regional Council
Douglas Shire Council
Fraser Coast Regional Council
Gladstone Regional Council
Gold Coast Council
Mackay Regional Council
Rockhampton Regional Council
Toowoomba Regional Council
Townsville City Council
Western Downs Regional Council

NT

Alice Springs Town Council
Darwin City Council

VIC

Ballarat
City of Greater Bendigo
Benella Rural City
City of Greater Geelong
Latrobe City Council
Greater Shepparton City Council
Melbourne City Council
Mildura Rural City Council
Moonee Valley Council
Port Phillip City Council
Surf Coast Shire
Warrnambool Council

SA

City of Adelaide
Gawler Council
Grant District Council
Murray Bridge Council
York Peninsula Council

TAS

Devonport Council
Glamorgan Spring Bay
Hobart City Council

WA

City of Karratha
City of Perth
Mandurah Council
Rockingham Council