New Zealand needs a collaborative approach to recycling & waste

Report released June 2020 Report by Mad World Ltd



Background to this report

In the Mad World Report An Assessment of Materials Collected for Recycling at Kerbside New Zealand & Australia, released in July 2019, we identified major differences in levels of recycling across New Zealand's councils and compared to Australia. There is awareness across industry, local and central government of the confusion that such a postcode recycling lottery causes for the consumer and householder.

In June 2020, we have again assessed council kerbside collection services and found a 30% reduction in councils that accept rigid plastic 3-7 at kerbside as overseas markets for mixed plastics in particular have become more limited. 33 councils however have collection services for rigid Polypropylene (PP) containers (# 5).

Since we undertook the initial research, councils, government and the waste sector have been working on plans to standardise the kerbside collection service. However, organisations such as the Food & Grocery Council, which represents the manufacturers and suppliers behind New Zealand's food, beverage and grocery brands, have not been engaged in this process.

Many brands have signed commitments that their packaging will be reusable, recyclable or compostable by 2025. If materials that have been recycled or are recycled in Australia are no longer collected at kerbside in New Zealand, then this will move the goalposts for businesses. Based on the current accessibility of kerbside collections, PET meat trays, aerosols, aluminium foil, mixed plastics 3-7 do not meet the 50% Conditional Recyclability threshold which allows a "check locally" label according to the Australasian Recycling Label standards.

Industry risks being presented with a policy that standardises collections nationwide based on the lowest common denominator. Put simply, councils that were collecting a broad range of materials may reduce their collection service to match those which were collecting a more limited range.

In this update, we suggest a different approach, which includes industry (and not just the waste management sector) in the solution and ask questions about the future of kerbside collections and how better alignment with commercial collections can improve outcomes.

Global problems with local impacts

Economies run in cycles. In 2008 a severe depression hit the world economies. New Zealand came through significantly stronger. Covid-19, however, has again impacted economies world-wide via a global lockdown. Significantly it has shown that recycling has been negatively impacted, because recyclers had to minimise handling waste, which resulted in recyclate being sent to landfill and many overseas markets became unavailable.

Whilst pre-Covid levels of recycling will return, these levels of recycling are unsatisfactory because of inconsistent collection systems around the country, contamination levels, and a lack of automation outside of Auckland.

How then can councils, businesses, industry and members of the public improve our recycling systems? A long-term view is required, which considers not just kerbside collections but also commercial collections, community "drop off" systems, and future container deposit systems. We need to see greater collaboration to achieve economies of scale and reduce contamination at source, as well as investment in technology to improve sortation.

Collaboration - building critical mass

An Assessment of Materials Collected for Recycling at Kerbside New Zealand & Australia identified clear differences in levels of recycling among councils nationwide. Some councils had no recycling capability beyond cardboard and plastics 1 or 2, while others in neighbouring councils had the capability to collect meat trays and plastics 3 to 7. These differences in collections have been shown in studies to cause confusion amongst the public.

Since June 2019 several councils have reduced the materials that are accepted for recycling. Figure 1 shows a comparison between June 2019 and June 2020.

Rigid plastics (3-7) have reduced by 30% which means that only 39% of the 61 councils which provide a kerbside collection now collect mixed plastics although PP containers (5) are collected by 54% of councils.

PET meat tray collection has reduced by 6% with 26 councils collecting these amidst concerns about food contaminated trays being presented and the inability of manual sortation systems to distinguish between PET and PVC. Aluminium foil collected has reduced by 10%.

Kerbside collections – 30% reduction in councils collecting rigid plastics 3-7 since June 2019.

Type	NZ Acceptability 2019	NZ Acceptability 2020
Plastics		
Plastic bottles (numbers 1 & 2 [PET/HDPE])	100%	100%
Meat trays (number 1 [PET])	49%	43%
Rigid plastics (numbers 3-7)	69%	39%
PP food containers (number 5)	N/A	54%
Metals		
Aluminium & steel cans	100%	100%
Aluminium aerosols	46%	43%
Aluminium foil trays	51%	41%
Paper		
General paper & cardboard	100%	100%
Pizza boxes	52%	66%
Tetra paks (milk/juice)	8%	7%
Organics		
Food waste	10%	10%

Figure 1: Comparison June 2020 compared to 2019 summary of acceptance levels by councils in New Zealand

This illustrates the difficulties faced by councils, particularly in remote areas or smaller local authorities with lower populations and therefore less rate revenue, when trying to maximise recycling collections. In the South Island, several councils have banded together to consolidate their waste disposal to one landfill. This has improved the efficiency of disposal and allowed smaller councils to enjoy a high-quality disposal point and transparent cost of disposal.

It would make similar sense for councils to work together to build a critical mass for recycling collections as well as waste. This should include the proposed standards for plastic recycling and setting standards for a range of packaging which does have a market value, such as meat trays, pizza boxes, aluminium foil, etc. The collaboration needs to go beyond traditional standard setting and have the intent to "standardise up" not "standardise down".

The proposed introduction of a Container Deposit System over the next few years means that a large percentage of what is currently collected at kerbside — namely beverage containers — will be recovered via a separate system. Households will still expect kerbside recycling services for their tin cans, cardboard, glass jars, aluminium foil, meat trays and rigid plastic containers. How do we make sure that councils do continue a kerbside collection service?

Enhanced collaboration (across all aspects of the waste management supply chain) and greater consistency will provide the potential for joint initiatives, revenue-sharing agreements, improved contracts, shared logistics, cross boundary operations and opportunities for vertical integration. For example, achieving a critical mass will allow smaller Perhaps councils and commercial waste companies, with transfer stations in particular, need to set standards for recycling that reflect the wishes of the public rather than taking just the easiest materials to recycle.

It should not be forgotten that landfills remain a significant asset for the disposal of waste. Well-developed disposal facilities such as Redvale or Hampton Downs are safe disposal forms for many businesses.

councils to consolidate the purchase of wheelie bins, collection vehicles, sortation and recycling facilities.

Commercial collections – one size doesn't fit all

Much of the current focus is on kerbside collections. However, commercial collections have a major role to play in the economics of recycling.

Significant amounts of waste are disposed of by businesses throughout New Zealand. Unlike domestic collections, which are covered by rates, businesses pay directly for their waste and recycling service, and pending the proposed increase in the waste levy, it is often cheaper to put waste in the landfill than pay for a recycling service.

Small businesses (SMEs) need regular and easy to use disposal approaches and are price driven. Large companies typically want standard billing nationally and high levels of service at a low price. The same equipment is often used to service both types of business, in order to keep costs to a minimum.

While these consolidated services provide a safe and regular collection service, they are by the nature of the commingled collection poor at delivering good recycling outcomes. Most of this waste either goes straight to a landfill or to a transfer station, which often makes little if any attempt at recycling. Unsurprisingly, the best recycling outcomes are where materials such as cardboard or glass are collected separately. Metal is an exception because of its intrinsic value. The customer pays for its disposal and it is also on sold to the recycler.

The Green Gorilla company has invested heavily in building an automated commercial waste sorting plant. It claims to reuse/recycle 40% of general waste. Not only has this set new standards for waste control, it has also allowed the company to achieve high levels of recycling and minimises the amount of waste sent to landfill, reducing their disposal costs. Why have others not followed suit? The answer may be that when overseas recycling markets are in decline, the disposal of waste to landfill makes a better economic model.

If we want to see higher recycling rates from commercial waste, then operators need to incentivise customers to split their waste and recyclables. This can be achieved by encouraging customers to recycle at source or changing the charging mechanism to discourage contamination.

At some premises, recycling receptacles will be contaminated if there is no adjacent rubbish bin or if the rubbish bins are full. This is true for all recycling and rubbish systems including in public places. In public place recycling we have found that having rubbish bins "bookending" the recycling bins reduces contamination. It is also important that bins are serviced on need rather than on schedule. When the rubbish bin gets full, people tend to use any available bin.

To achieve the government and industry's commitment to a circular economy, investment in better sortation systems needs to be a higher priority than it is at the moment. The more focus on incentivising recycling over waste to landfill, the more likely this investment will be. However, for commercial waste operators, investment in sorting systems may be at the expense of investment in landfills and transport networks. Recycling infrastructure needs government investment.

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Waste businesses need to be much more proactive and customers need to require and resource this.

Contamination – quality thresholds are increasing

Recycling collections are often plagued by contamination. Contamination refers to inappropriate levels of non-recyclable material in collections, which typically reduces the value in the material stream. An example is the cardboard material stream and food waste, which is often heavily cross contaminated, along with other materials such as glass. A visit to a cardboard recycling plant or a food waste diversion destination will show the persistent problems of unwanted waste contamination. Food recyclers regularly find glass bottles in the residue. Cardboard exports require high standards of quality, with many receiving countries requiring maximum contamination levels of 1-2% in some cases.

Businesses find it difficult to limit the amount of contamination and yet the solution can be simple, but requires strong management, along with training and education. Continued contamination can often be spotted by the driver collecting the waste, or by the people working at the processing plant. Cardboard contamination can often be identified by examining the product as it comes in the door. Food waste is more difficult, but regular examination of the product as it is laid out for checking can normally identify the source. Collection teams also need support from the local sales team. They need to visit customers and check for contamination at source.

One very effective solution to contamination is to ensure that companies are educated about waste. A critical success factor is to have a senior person in the business who is the Waste Champion. This person leads education about waste and has the necessary 'clout' to ensure good practice is embedded. Team members should be trained about waste and contamination but will not lead the process. This has to come from management and the waste champion.

Waste businesses need to be much more proactive and customers need to require this of their service providers. Drivers and account managers need to provide feedback to their customers about what is contaminating their waste stream and how this can be rectified. This requires a dedicated person responsible for giving feedback to customers. All too often this is left to a busy person in a call centre or sales support team. It falls over at the first hurdle. The resource needs to be allocated time and responsibility to communicate the issue with the customer. The upside is not only less contamination, it is an improved relationship with the customer.

Ultimately businesses that are persistent contaminators need to be penalised financially if they continue to provide contaminated product. Even modest penalty charges are enough to generate effort within businesses to eliminate persistent contamination. A \$100 charge is normally enough to generate enough indignation within the finance and credit control teams to get action taken to limit contamination. Innovation in recycling technologies is constantly pushing the boundaries of what is technically and economically feasible.

Investing in recycling technology & better systems

The waste management sector in general operates under narrow financial margins. Therefore, the industry requires collection, sorting and recycling systems that operate effectively and efficiently. The multi-faceted and complex nature of waste management, with multiple public/ private players across the supply chain, can make capital investment in infrastructure challenging. However, innovation in recycling technologies is constantly pushing the boundaries of what is technically and economically feasible, with investments that often have short payback periods. Furthermore, collaborations across collectors, sorters and recyclers can provide winwin situations in the upgrading of specific points of the supply chain, particularly when investment risks are shared with government.

For example, eddy current sorters can significantly increase the recycling capability of aluminium foil packaging. Councils and industry should be encouraging the installation of these machines to recycle scrunched aluminium foil and related items. Furthermore, the installation of optical sorters at materials recovery facilities can significantly increase the range of plastics that are sorted. Payback in eddy currents for example can be as little as one to two years. Such additions represent good value.

Whilst most attention is being directed towards the amount of plastic not being recycled, New Zealand has a major problem with recycling mixed paper and cardboard. Currently, there is only onshore capacity to process approximately 50% of the estimated 480,000 tonnes of fibre-based material that is recovered each year. The lack of alternative markets and domestic recycling capacity is increasingly making landfill the least cost option, notwithstanding a proposed increase in the waste levy. This does not align with New Zealand's aspirations for achieving a circular economy. Commingled kerbside collections means that fibre does not meet the quality required by processors in New Zealand or offshore. It makes no sense that companies like Huhtamaki Moulded Fibre cannot source enough fibre from Auckland to manufacture egg boxes and other food packaging because the recycled paper is contaminated with glass and other materials.

Materials recovery facility in United Kingdom

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Many manufacturers and retailers have signed up to the Packaging Declaration which requires all plastic packaging to be 100% reusable, recyclable or compostable by 2025. This is seeing brands transition to more easily recyclable plastic resins or other materials. What seemed like an achievable goal in 2018, when companies first signed up, is now just over three years away. Based on the current accessibility of kerbside collections, many packaging materials do not comply with the 50-70% Conditionally Recyclable Label let alone the 80% Recyclable threshold set out in the Australasian Recycling Label standards.

The Food & Grocery Council and its members are assessing the plastic, fibre and compostable packaging which they use. This is necessary to understand what the current position is and to set a pathway to the 2025 targets.

Achieving these targets means assessing the options for transitioning from "hard to recycle" plastics to other plastics or other materials; understanding the cost and timeframes for doing this; investment in recycling infrastructure by government and the waste sector; and providing consumers with confidence that what they recycle is being recycled. We need a recycling industry which leverages the potential value and scale of commercial recycling to help improve the kerbside collection systems.

Opportunities to improve recycling continue to surface. There are possible solutions with good management, sensible practices, and awareness of business opportunities.

It is time that industry and stewards start taking more practical steps to improve return rates. This needs to be led by industry at the product/ packaging design phase and supported by the waste management industry.

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 offer our clients a range of services, which include:

- Conducting a waste audit at your business, in order to understand the volume and types of waste your operations produce and identify ways to reduce waste and increase recycling. A review of your waste disposal costs. Waste education.
- Helping you make better choices about your packaging so that you are able to meet industry and government commitments for packaging to be reusable, recyclable or compostable by 2025.
- Measuring your Greenhouse Gas (GHG) footprint and providing a reduction pathway - voluntary greenhouse gas emissions reporting.

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. Lyn is also an independent board member of the Association of Metal Recyclers and Vice President of Olympic Weightlifting NZ.

Steve Long

Steve has over 20 years' experience working in the environmental sector in a range of global locations. Steve worked for 10 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's MBA has a specific focus on the circular economy. A large amount of his current work is in South-East Asia and Africa, as well as New Zealand.

lan Mayes

Ian has an extensive business background working across Europe and New Zealand carrying out senior roles with Goodman Fielder, DB Breweries and Waste Management. Ian started his career managing operations for home-shopping retailers GUS PLC and Empire Stores early precursors of online shopping. His areas of expertise include supply chain management, operations, strategy implementation and service delivery, and waste minimisation and recycling. Ian has an MBA from the University of Strathclyde.



madworld.co.nz info@madworld.co.nz