

## RESIDENTIAL RECYCLING IN PALMY EXPOSED!

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Residential waste practices are almost invisible. They occur behind closed doors and, for many, the question of waste is only brought to consciousness and mediated by local curb side services. The Palmerston North City Council (PNCC) and Massey University have been collaborating in research aimed at better understanding the drivers and barriers to residential waste minimisation in Palmerston North since March this year. This has involved fortnightly interviews, ongoing waste audits, curb side trials, and workshops with four Palmerston North households. The unique methodological approach applied in this action research project has started to expose our participants' otherwise invisible household waste attitudes, knowledge, and practices. This paper will present some of the data generated to date and propose possible recommendations for sustainable behaviour change toward residential household waste minimisation in Palmerston North. This project was initially inspired by a Canadian film called *The Clean Bin Project*. The film depicted the film-makers'<sup>1</sup> challenge to go 'zero waste' in their home for a year. Corrina Tucker<sup>2</sup> and I<sup>3</sup> wanted to know what some of the challenges and drivers households might be faced with when confronted with a challenge like the *Clean Bin Project* in Palmerston North. Rather than ask our participants to attempt to go zero waste from day one, we eased them into the idea, and so here is what we did.

### Methodology

Our four households registered their interest in taking part in the project through our administered survey of 147 Palmerston North residents last summer. When the action research phase of the project started in March, we began to interview the households fortnightly about their waste knowledge and practices. At this time, the Palmerston North City Council (PNCC) had provided us with receptacles for trial collections of green waste, food waste, and hazardous waste to add to the general recycling, glass, and general waste

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<sup>1</sup> Grant Baldwin and Jen Rustemeyer

<sup>2</sup> Massey University Environmental Sociologist

<sup>3</sup> Massey University Environmental Anthropologist

curb side collections already available in Palmerston North. PNCC also provided the time and expertise of local environmental educator, Pip Chrystall,<sup>4</sup> for weekly audits of all these curb side collections as well as for one of the three educational workshops we held with our participants.

The research process was initially a bit mysterious to our participants as they did not know what we were going to ask them to do from month to month. In March, in addition to fortnightly active interviews<sup>5</sup>, we observed our participants' waste practices and asked them to journal questions, thoughts, and observations about their solid household waste and the waste audits and curb side trials conducted since beginning of the research period. Then, in April, we asked our participants to try to minimise the waste entering and leaving their houses as much as practicable. In May, we introduced the participants to one another for the first time in an opening event. At the event, we offered them a range of items from bamboo toothbrushes to worm farms to assist with this process. They were now able to assist one another via a blog site if they chose to and we provided educational support to help them minimise their waste in three workshops. In the first workshop, I showed the participants how to make their own toothpaste, deodorant, laundry and dishwashing detergent. In the second workshop, Pip took the participants on a tour of the Awapuni Resource Recovery Park, presented a short film called *The Story of Stuff*, and showed them what could and could not be recycled in Palmerston North. In the final workshop, I showed *The Clean Bin Project* and gave a presentation on the potential environmental and human health risks associated with some plastics. In June, we retracted all support but continued with interviews, and in July, we became 'hands off'. We will continue the trials and audits until December. However, we will not interview the participants again until November as we want to know how durable the environmental behaviours the participants have taken up are, and whether they have developed any innovations to further reduce their consumption and waste without our additional support.

Since March, Pip has been collecting and auditing the participants' general and food waste weekly while she collects glass and general recycling and audits these fortnightly.

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<sup>4</sup> Environmental educator contracted to the PNCC

<sup>5</sup> Where we interviewed our participants as they showed us how they managed waste in their homes.

Hazardous waste is collected twice during the course of the research: in May and October. The bins for these collections were all left on the residents' properties and taken in the back of Pip's truck to the Awapuni Resource Recovery Park where she would audit and photo-document the contents. General waste was measured by volume and weight while all other collections were measured by weight only. In addition to the measurement of the collections, Pip recorded changes in the kinds of contamination found in the recycling over the research period. This included a category of plastics: those coded 3, 4, and 7 that the PNCC accept but send to landfill due to a lack of a financially viable market.

### **Our households**

The four households who volunteered to participate in the research included the following: Paul<sup>6</sup>, a retired electrical engineer living with his adult son; Sarah, a solo-mother working two part-time jobs and studying by distance at Massey University with a teenage daughter; Thomas, a married Zimbabwean expat and stay-at-home dad with a six-year-old daughter; and Anna, a part-time librarian, with a husband working in an environmentally-focused career and their two teenage boys. All of the households self-identified as environmentally concerned and as good at recycling in the summer survey. Despite this, they all faced various challenges in reducing their household waste during the action research phase of the project.

In the first month of research, we determined the baseline for the participants' waste practices and attitudes. We already had some information about our participants from the survey but this was expanded and contextualised during this period. While we regularly interviewed one participant from each household due to their availability during the day, all of the key representatives from each household but one<sup>7</sup> attended the workshops and focus group and most of the rest of each of the households attended these too. All our participants believed they were good at recycling and they all had either a working compost or worm farm system or both when the project started. Despite this, there were widespread misunderstandings about what could and could not be recycled. This was evidenced in the content of the surveys, interviews, and the audits. For example, all the

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<sup>6</sup> Pseudonyms have been used throughout to protect the identity of our participants.

<sup>7</sup> Due to her child's long period of illness. We visited her in her home instead for one of the workshops.

participants thought that plastic bags could be recycled. However, this was not surprising since the PNCC accepted plastic bags in the general recycling bins. Where there was a female adult in the household, she was always the lead waste manager in the household. Partly as a result of their diverse backgrounds, participants employed diverse waste strategies. For example, Paul remembered a time when everything was repaired rather than replaced, and he was concerned at the volume of general waste produced. When we first visited him, we noticed that he kept a stack of clean margarine containers on his fridge which he used for freezing food and planting seedlings. He told us that he only started re-using plastic bags when his local supermarket began charging for them. Paul always sorted his recycling into categories and fastidiously bundled these up into plastic bags. Only later in the project did he become aware that this practice was unhelpful for those working in the MRF<sup>8</sup>, and that plastic bags were not recycled in Palmerston North. He and his son had a rotating compost system but bones and meat scraps would go to the rubbish. Paul did the purchasing in his household as his son worked full time. His choices, he told us, were based on price and origin rather than on environmental impacts.

Anna remembers a childhood of bottling and baking and what she considers positive environmental practices. These were lost a little in her first flatting experience and rekindled later when flatting with more environmentally-minded people. At the start of the research period, she recycled whenever she could and her methods were highly innovative. For example, polystyrene was chopped up and used in beanbags and cabbage leaves lay in neat bundles ready for burning on the brazier. She would wash items she was unsure about and put them in the recycling bin in the hope that they were going in the right place.

No one recycled in Sarah's house when she was growing up and she said that it was only really in the last ten years that she started doing it. She thought she was pretty good at recycling (and she was aware that she produced large amounts of recycling each week) but she acknowledged that she was not so good at recycling bathroom containers and did not realise she could recycle cardboard toilet rolls. She chose not to buy in bulk due to lack of storage and used plastic bags for convenience. While she did use her compost bin, she admitted that she threw a lot of food away too. Her green waste was regularly dumped in

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<sup>8</sup> Materials Recovery Facility

a pile in her backyard to decompose. Our audits show that she initially produced the greatest amount of food waste and glass of all our households.

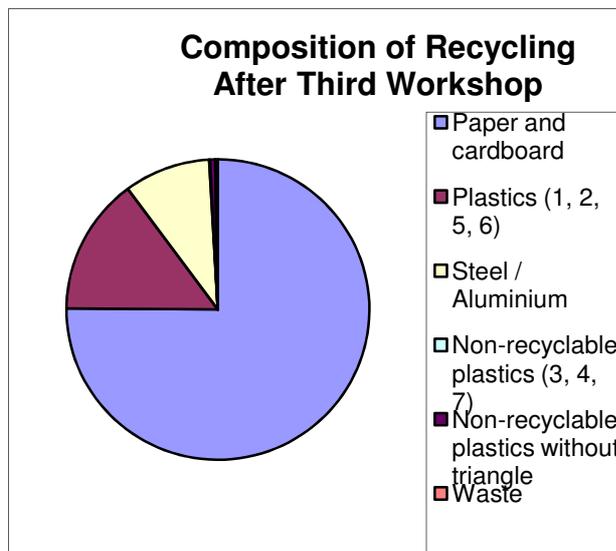
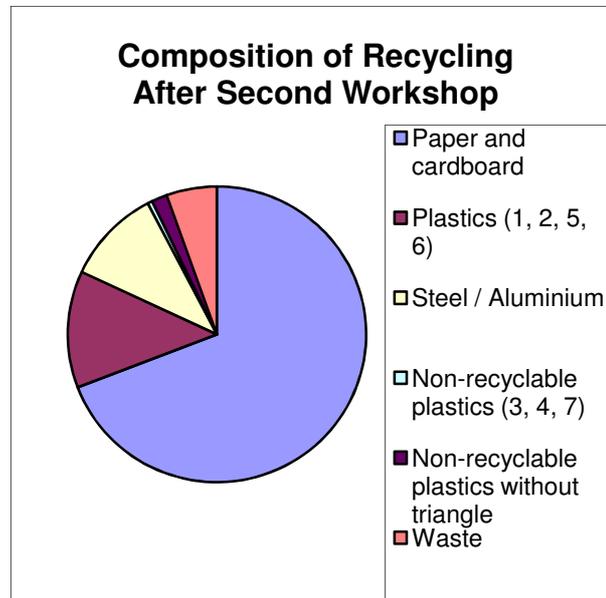
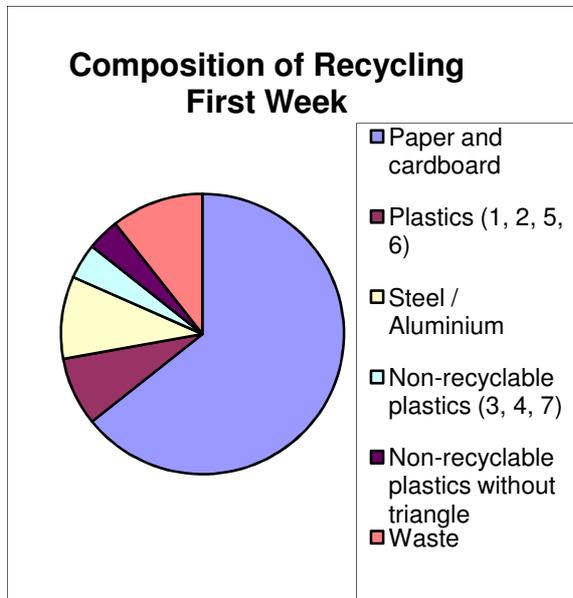
Thomas grew up in Zimbabwe where there was little recycling. He described himself as unconcerned about environmental issues and 'destructive' when he was younger. However, now that he is older, he is more aware of his ecological footprint. Thomas had a worm farm and a composting system when we started the research. He avoided heavily packaged items and returned packaging from white ware to point of purchase. Thomas and his wife used disposable nappies for convenience when their daughter was younger.

### **Drivers**

Unsurprisingly, the diversity of backgrounds and lifestyles of our participants were reflected in the range of drivers and barriers they reported. However, there were a cluster of similarities too. All the participants stated that the workshops and the social support they received during the research were influential in changing their household waste practices. These workshops included the direct experience of the volume of recycling and waste coming through the Awapuni Resource Recovery Park. Some of the participants stated that this had a significant impact on their household waste practices. Most of them said they would continue to make the homemade cleaners learned in the first practical workshop. A couple of households have gone on to source recipes for additional homemade products. Paul, however, found this too onerous and would not continue this practice. Three out of the four households started replacing plastic bags with the fabric produce bags offered in the first workshop, and all the participants experimented with package-free toothpaste, and shampoo with varying results. Due to ill health mid-year, Anna was unable to put as much effort into minimising waste as she would have liked to. As primary cook and shopper in her household, her ill health had a significant impact on her family's ability to minimise waste.

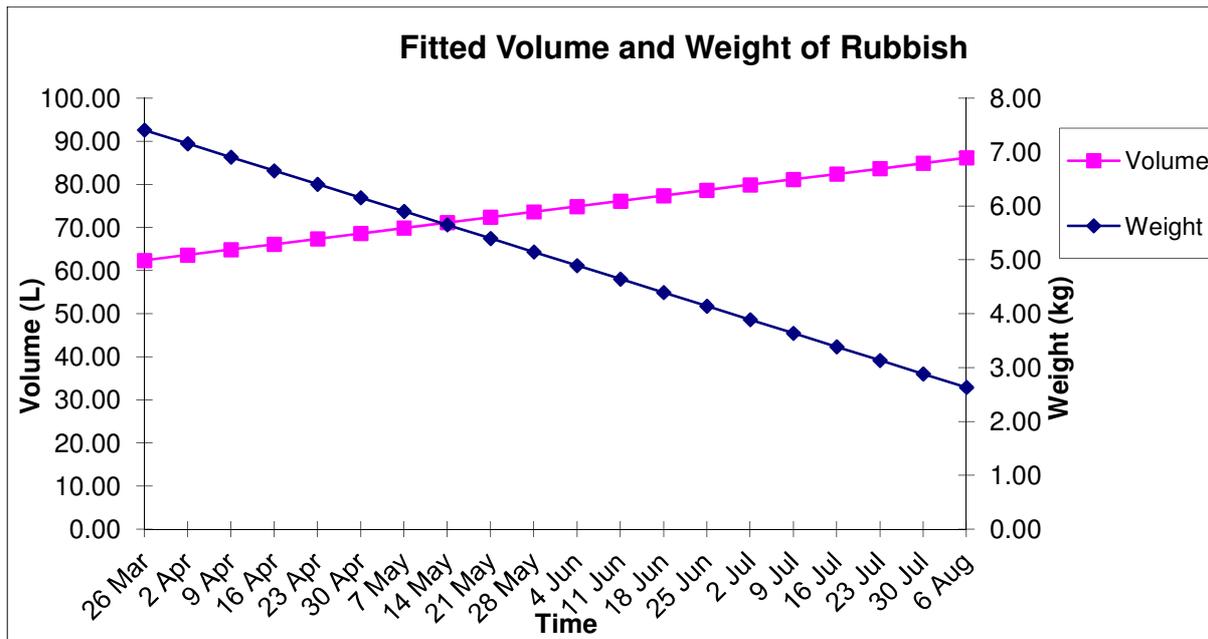
The participants acknowledged that conscious consumption and making their own household products could reduce the cost of food and household items, reduce waste, and have less impact on the environment. A greater awareness of the chemical composition of plastic food packaging and the potential impact on human and environmental health was also beginning to influence consumer choice after the third workshop. The extent that the

educational components of the research has driven consumer and waste practices is clearly evidenced in the following pie charts. These show a dramatic decontamination of the mixed recycling bin following each of the three workshops (including the two films and site visit).



Cost was also one of the key incentives for reducing packaging and landfill waste. Council rubbish bags were considered expensive and the more waste that could be diverted from there to the recycling bins, the cheaper the cost to the householder. However, the pie charts show that regardless of the additional cost of council rubbish bags, our participants chose to remove plastic bags and non-recyclable plastics from

the recycling. Some of these were transferred to council rubbish bags, with the new knowledge that they could not be recycled. But as the following line graph shows, the overall weight of waste also decreased over time while the volume increased. Our preliminary conclusion from this is that there has been a steady decrease in purchases of non-recyclable plastics, while light, high volume plastics such as biscuit wrappers, chippy packets and plastic bags are now being transferred from the recycling to the council rubbish bags.



The researchers’ ‘surveillance’ through on-going audits was a prominent point of discussion as participants acknowledged that the audits made them more careful about what they put into their bins. Therefore, for many of the participants, the results illustrated in the graphs can be partly attributed to the fact that participants knew their waste was being audited. However, two of the adults in two different households made it clear that they were unfazed by the surveillance nature of the audits and now, armed with new information, they were more concerned about ‘doing the right thing’.

### Barriers

Some of the barriers to waste minimisation identified by the participants were locally-specific and some were broader in scale. Even though our participants were environmentally concerned from the beginning, a lot of the information provided in our workshops was met with varying levels of surprise indicating significant gaps in knowledge about local and global waste challenges. Information was identified by our participants as a key driver of waste minimisation while a lack of information or misinformation was identified as a barrier. There was a great deal of confusion around what could and could not be recycled right up to June. This was exacerbated by the PNCC stickers under the lid of their general recycling bins stating they would accept ‘bags’ and meat trays. Bags were misinterpreted by our participants as any kinds of bag including biscuit ‘bags’ (packets). When our participants learned that plastic bags, meat trays, and plastics coded 3s, 4s, and

7s<sup>9</sup> would be sent to landfill if placed in the recycling bin, they were then empowered with the information needed to decide to either decontaminate the recycling stream and place these into the landfill or avoid these items in their household purchases.

Convenience and time were significant barriers to waste reduction. While it was easier for Paul, Anna, and Thomas to spend time on recycling and composting systems as they were home much of the day, shopping was a different ball game. While Anna was always very keen on taking assorted items to the local Arts Recycling Centre, she found that a lack of parking put her off. There was a lot of uncertainty around what to do with syringes, paint, bulbs, car batteries, and other hazardous waste. Green Hub used to take some of these items until it closed down early this year<sup>10</sup>. Even when it was open, Paul found it inconvenient to drive across town for small amounts of hazardous items, so he would put these into the rubbish instead. While polystyrene is not accepted in the PNCC recycling bins, it can be taken to a local business for recycling on the outskirts of the CBD. This, again, was considered inconvenient and a central one-stop recycling service with parking would mean that our participants would be more likely to use it.

The four households started bringing their own containers and bags to supermarkets, green grocers, and butchers with varying reports of shopkeeper receptivity. Steve's Wholefoods was identified by the researchers as the only local shop offering a wide range of bulk products where they could confidently bring their own bags or containers thus avoiding excess packaging. However, many found its location inconvenient and a couple of participants said it 'felt dirty' but they admitted this was probably because of the cluttered store layout. Doing their weekly shopping in two or three different stores rather than one supermarket was time-consuming and inconvenient, particularly for those busy families with children. Driving across town to a number of stores to avoid excess packaging was deemed both undesirable, and environmentally contradictory.

As the project went on, all the participants became more frustrated that they could not purchase items that were unpackaged or at least that came in recyclable packaging. Paul,

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<sup>9</sup> There are few 3 and 7s and if these do go in with the mixed bales, they are removed at the next stage. The problem with 4s is the sheer volume and that very often they are contaminated with waste.

<sup>10</sup> This has since re-opened but does not provide the same services as it used to.

for example, became increasingly concerned that the recycling labels were too small to see, making it difficult to sort his household recycling and make environmentally ethical purchasing choices. For example, his preferred margarine brand used two different packaging suppliers: one had recycling labels on it, the other did not. There was also confusion over how to ethically dispose of degradable bags. Sarah noted the contradiction in some eco-friendly products and their wasteful packaging, and a number of participants cited the expense of buying eco-friendly products had forced them to purchase cheaper, less sustainable alternatives. Anna tried to do home baking. However, she said it was time-consuming and difficult to find unpackaged ingredients, and her gluten-free brands were often packaged in non-recyclable plastic. At the focus group during the third workshop, there was clearly some consumer activism stirring in our participants. Thomas's wife stated, 'I always knew what to do but it was always someone else's problem. Now it is my problem.' Since then, a couple of our participants have written to council members and manufacturers requesting changes to eliminate barriers to their efforts to minimise waste.

## **Conclusion**

This small-scale, yet complex, action research project allowed us to expose some key drivers and barriers to behaviour change toward household waste minimisation in Palmerston North. The drivers included social support, convenient access to sound information, products, and services, experiential learning, and affordable and effortless waste minimisation practices that could become habitual. For long-term sustainable solutions to household waste minimisation, we need to look at the connections between the household and broader societal structures that may drive or restrict individuals' efforts to reduce their own waste. This includes enhanced communication between municipal waste managers and the community but also legislation around packaging labelling, and the banning of plastic bags, BPA plastics, and styrene food packaging in cities as they have in many major cities internationally. All of our participants started out this year with a strong environmental ethic and yet, even they have struggled to identify what can and cannot be recycled in Palmerston North; what some cheaper and environmentally ethical alternatives might be to packaged goods; and what they could do to reduce their own household waste. We can only imagine how our findings could compare with less environmentally concerned households in Palmerston North.