



# ***CONNECT THE DOTS***

## **Compostable Packaging Stewardship Scheme**

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### **SUMMARY REPORT**

A collaboration between:

**Super Trash, Go Well Consulting & Pitchblack Partners**



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# Executive Summary

This project, to establish a sustainable product stewardship scheme for compostable plastic packaging in New Zealand, was started out of frustration with the lack of progress that was happening in this space. Although many brands, industry bodies, and the government were signing up to the 2025 Packaging Pledge that requires 100 per cent of packaging to be reusable, recyclable or compostable we felt that we were seeing very little in the way of action to provide an end-of-life solution to compostable packaging.

So we took it upon ourselves in mid-2019 to research the industry, engage with a wide range of stakeholders, and design a product stewardship scheme for compostable plastics. In May of this year, we shared our scheme design in our Feasibility Study which you can download [here](#).

In December 2019 we were fortunate enough to receive some funding support from Auckland Council by way of a \$15,000 grant from their Waste Minimisation and Innovation Fund. This allowed us to run a 6-week trial with 7 brands across 4 stores in Auckland, from June 15th, 2020 to July 7th, 2020.

We called this trial 'Connect the Dots' (CTDs)  
This report summarises our findings.

During our research in designing this scheme we quickly realised there is a gaping hole for compostable plastics in the way of getting the packaging, at its end-of-life, to composting facilities that are willing and able to process it. We set out to help solve this infrastructure issue.

We appreciate there are complexities relating to compostable plastics but we don't believe a product stewardship scheme for them is that complicated. We identified the following key steps:

- Certify compostable plastics (whole packet);
- Create a scheme that authorises packaging to take part;
- Provide authorised packaging with a coloured logo or dot;
- Provide collection bins at drop-off locations with the same colour;
- Deliver a well-designed communications strategy including community engagement officers;
- Collect the compostable plastics for processing by centralised or urban composting sites.

Due to our limited resources and to ensure the scheme was easy to communicate we have focused entirely on compostable "soft" plastics (crisps, coffee, cereal etc), aka "flexible packaging". However, a scaled-up scheme does have the potential to accept other compostable plastics and other compostable packaging. In fact, the biggest cause of "contamination" to our 6-week trial was compostable coffee cups.

Although it was clear 6-weeks was not long enough to see significant changes in customer behaviours, and 4 stores only captured a small number of customers' so our data sets were easily skewed, but it did provide us with significant learnings and insights. It's a start that we now need to take forward into a second far larger trial.

88% of our 197 in-store survey respondents said they would use this scheme, and 70% said they were 'likely' or "very likely" to support a product or brand participating in this scheme.

Our total contamination rate across all 3 collection bins was 65% which included compostable packaging that had not been authorised to be part of the scheme. Meaning it didn't contaminate the final compost but did contaminate our scheme.

This is important as our scheme design requires packaging to achieve whole-packet compostable certification (see our feasibility report for details) to be authorised to join. Currently, all the brands we are aware of with compostable packaging claims are using certified compostable films but have not undertaken whole packet certification due to costs (in the tens of thousands per packet) and time (6-12months).

This level of requirement is an obstacle for many brands but it would ensure the long-term sustainability of the scheme by negating the risks of "false compostables" contaminating the final compost and ultimately our soils.

It is important to note that for us to run this trial we had to make a concession and all packaging we authorised use certified films but do not have the whole-packet certification.

In designing this scheme the authorisation element also allowed us to manage "freeloaders" from exploiting the system, but with the recent announcement by the government requiring mandatory product stewardship schemes for plastic packaging, this has largely become a non-issue.

Contamination from non-compostable items (predominantly non-compostable plastics) was 35%.

When auditing each collection bin at the end of the weeks we collected information on the classification and total number of items collected, the total number of items collected per brand (and product) and the return rates of packaging items (calculated by comparing weekly sales data to our bin audit data).

Unsurprisingly the most numerous packaging items returned were from chocolate, crisps, meat, and chicken. All foods that are commonly consumed in hours or days after purchasing.

The average return rate was 5%. A figure that seems low to us but

Although we were fortunate enough to get \$15,000 funding from the Auckland Council WMIF fund to run this 6-week trial there has been no other funding provided for the work that has gone into designing this scheme or the reports we have produced. Although we feel proud of the contribution we have made to help solve the plastic pollution crisis here in NZ for a product stewardship scheme to be successful it requires the well-resourced industry bodies, local and national government, and large brands to get involved.

It is worth mentioning that following the announcement by the government that plastic packaging was one of the six priority products for regulated product stewardship under the Waste Minimisation Act we have received considerably more interest in this work.

This report (and our Feasibility Report) are open-sourced and free to be circulated and replicated (although we would appreciate being cited). It's our hope that these two reports are a catalyst for implementing a nationwide, sustainable, product stewardship scheme for compostable plastics in New Zealand, and the colour coding methodology will be looked at for other material streams.

# What we did

## Engaged stores and brands

Following the news of our successful funding grant from the Auckland Council Waste Minimisation and Innovation Fund we reached out to the brands currently using compostable packaging, and to all the major supermarkets that operate in Auckland, many of whom we had been in discussion with in producing our Compostable Packaging Stewardship Scheme Feasibility Study report. Following three months of conversations, we recruited the following brands and stores to participate in this trial.



The major considerations for the brands included the colour of the sticker we would be applying to their packaging and the requirement to place the sticker on the front of the packaging. After some initial concerns from a couple of the brands (particularly their marketing and brand personnel), we achieved consensus on the sticker design and location.

The store's major considerations were the location of the bins and the impact the scheme would have on their staff's existing workloads. We let the stores make the final decision on bin location and we ensured we provided the necessary labour to ensure the stores did not feel any stress on their resources. In the early weeks of the trial we committed to applying every sticker ourselves, but as the trial progressed we had stores offer to sticker the packaging as they unpacked the items due to it being less labour intensive than they anticipated.

## Printed our Branding Assets

We provided each store with branding assets to communicate the scheme to their customers. These consisted of the sticker to be applied to the authorised packaging, a flyer to hand out to customers, shelf wobblers to be located where the participating items were shelved, and the poster that was located on the “backboard” of the bin.

## On-pack stickers



## Flyer



## Shelf Wobbler



## Posters



## Bin stickers



## Why Pink?

Primarily we settled on the bright pink colour scheme to try and stand out on a wide range of packaging designs and colour schemes within the participating packaging, and amongst all the non-participating packaging on the shelf. We were also keen to keep well away from any typical “green/eco” colour schemes. We wanted the emphasis to be on matching the colour on the packaging to the colour on the bin. We felt the use of any shade of green would allude to the bins accepting anything that was compostable (the lids of the bins were green - see What We Learnt: Bins).

We did not want customers making any decisions about what was or wasn't compostable before placing a packaging item in the collection bins. The simple message we were conveying and the cognitive process we wanted to facilitate was, put the packaging with the pink dot into the bin with the pink dot.

## Staff Engagement

To achieve success with a product stewardship scheme we believe the staff of the participating stores need to be well informed and engaged, and the managers highly informed and engaged as to how the scheme functions.

We were able to meet with the staff at Commonsense the week prior to the trial starting to inform them of how it would work and answer any of their questions. We were unable to repeat this at the Huckleberry stores. It subsequently became clear to us that the

Commonsense staff were better equipped to help customers with any queries they had. This was particularly helpful for us when we did not have volunteers to cover a Community Engagement shift.

We did, however, have multiple conversations about the trial with individual staff at the Huckleberry stores throughout the 6 weeks and overtime this helped to develop their capability. This indicated to us they were engaged but would have benefited from an education session at the start. A requirement we would highly recommend for any future product stewardship scheme (for any product or material type).

## Getting Set Up

Following the agreement of the seven brands and four stores to participate in this trial we set up 3 stores (HB New Lynn, HB Glenn Innes, and Commonsense) with a 120L wheelie bin and CTD backboard. Trade Aid set up a small bespoke basket instead.

The location of these bins was dictated by each store manager but consequently provided us some insights as to where the optimal location would be.

On the opening morning of the trial we visited each of the 3 stores and applied our stickers to every participating product in each store. A labour-intensive task that took 2 hours at Commonsense and an hour at each Huckleberry store (see images below). We also provided each store with flyers to position at their counter and requested they hand them out to customers that purchased any of the participating products, or who asked questions about the scheme. See conclusion.

## Communications

Outside of the branding assets and our customer engagement volunteers the only other communications we did was via the website and some Go Well social media posts. We purposefully kept the communications limited, and asked our stakeholders to keep it limited, due to the trial having just a 6-week time frame.



Jack explaining the scheme to staff at Commonsense.

# On-pack stickers



# Bins and Collateral

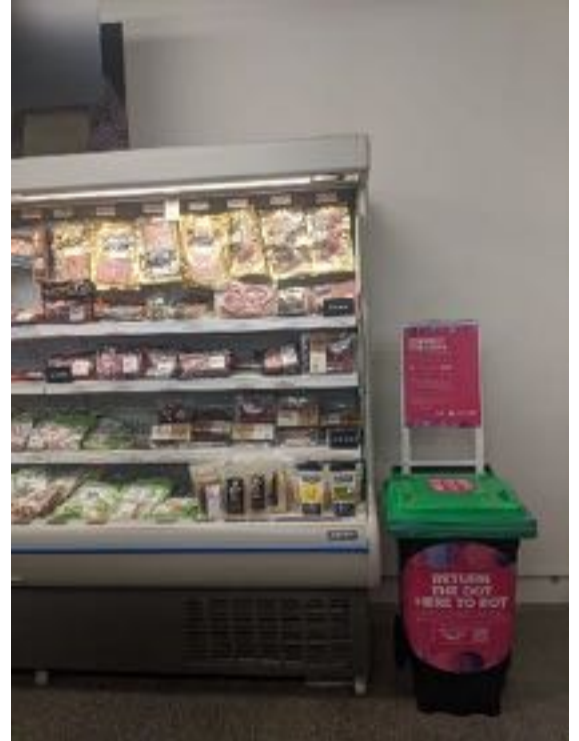
Commonsense



Huckleberry Glen Innes



Commonsense



Huckleberry New Lynn



Commonsense



Huckleberry Glen Innes



Huckleberry Glen Innes

Commonsense



Huckleberry Glen Innes





# Returned Packaging



# The Stores / Drop Off Sites

## Site 1 - Huckleberry New Lynn

Address - 34D Portage Rd, New Lynn, Auckland

HBNL is a large market store located in the West Auckland suburb of New Lynn. They sell organic produce and packaged goods as well as providing a refill hub and in-store Herbal Dispensary with qualified naturopaths. There is a Soft Plastics Recycling Collection Bin present which requires regular emptying. There is a large carpark and a Huckleberry Cafe attached with internal access from the store.



## Site 2 - Huckleberry Glen Innes

Address - 150 Apirana Avenue, Glen Innes, Auckland 1072

HBGI is a small market store located in the East Auckland suburb of Glen Innes. It has a refill hub and car parking for 3 - 4 vehicles. They sell a range of organic produce and packaged goods. There is also an in-store Herbal Dispensary with qualified naturopaths. There is a Soft Plastics Recycling Collection Bin present which requires regular emptying.



## Site 3 - Commonsense Organics

Address - 284 Dominion Rd, Mt Eden, Auckland

CS is a small market store located on the busy Dominion Road in the Auckland suburb of Mt Eden. They are located next to a public carpark and do not have a Soft Plastics Recycling Collection Bin. CS sell a range of organic produce and packaged goods including their own branded label, all of which are in compostable plastic packaging.



## Site 4 - Trade Aid Ponsonby

Address - 172 Ponsonby Road, Ponsonby, Auckland 1011

TA Ponsonby is a small retail store selling only Trade Aid products including their chocolate, all of which is in compostable packaging. There is car parking available on the surrounding streets and they do not have a Soft Plastics Recycling Collection Bin.



# Key Features

## Surveys

To provide us insights into the appetite for, and comprehension of, this scheme we engaged the research consultancy FOLKL to help us write a survey which we used, in person, to gather responses from 197 people throughout the three stores over the 6 weeks. In order to track the impacts of the trial we surveyed customers in-store on the following days:

Days 1, 2, 6 and 7 (Week 1),

Days 22, 23, 27, 28 (Week 3)

Days 41 and 42 (Week 6)

The breakdown of the number of responses across the three sites is as follows:

### Huckleberry New Lynn

Week 1 - 49

Week 3 - 9

Week 6 - 41

TOTAL - 99

### Commonsense

Week 1 - 23

Week 3 - 17

Week 6 - 34

TOTAL - 74

### Huckleberry Glen Innes

Week 1 - 7

Week 3 - 10

Week 6 - 7

TOTAL - 24

GRAND TOTAL - 197

Further to the in-person-on-location-surveys, we posted a modified survey on the CTDs website and circulated a link through social media channels.

Linkedin - 17

Go Well FB page - 19

CTD Website - 4

Total - 40

See Survey Results for the questions we asked each respondent and their collective responses.

## Bin Minders / Customer Engagement Officers

We strongly believe that any nationwide product stewardship scheme that involves the general public placing a material type into a bin requires a period of high level human to human engagement at each new site. This will:

- engage the local community in the scheme,
- answer their questions,
- build trust and education,
- create well-informed scheme ambassadors,
- instil a sense of ownership towards the scheme in each community.

This approach also opens up opportunities such as spot prizes, store vs store competitions, and employing local people (perhaps from local environmental groups).

# Case Studies

## Clean Events

According to George Seton, Managing Director of Event Waste Management Provider, Clean Events having “bin minders” at their events “overall has a better outcome” and they “certainly get less contamination”. However, it does “often come at a higher expense” and the labour efficiency is significantly better for a “back of house sorter”.

Although events are often seen as an ideal environment to achieve very low levels of contamination due to the levels of control and influence around the packaging used, bin stations supplied, and the opportunity for bin minders, Senton finds that every event is different and so event-goers are continually having to re-learn the materials management systems at each event.

The influence on contamination rates from the bin minders also depends on the level of engagement and enthusiasm from the bin minding individuals. “Enthusiasm for the job varies greatly” amongst the volunteers they are provided at Splore Festival, whereas they find local community groups at other events to be better overall performers.

## Auckland Council

Lloriane Kamilo, Waste Wise Advisor (Programme) at Auckland Council also has significant experience in using “bin station monitors” at Council run Zero Waste Events. She finds it “has a significant impact having bin station monitors. Having someone on hand readily available to direct the public and answer questions has a positive impact.”

The Auckland Council Zero Waste Events website shares some case studies of waste free events and we note the following : Splore 2016, 85% Zero Waste - “A large number of volunteers monitored bin stations constantly to ensure people put their waste in the right bins.”

Mangere East Community Festival 2016, 80% Zero Waste - “Bin station monitors create success! Some people even opened up plastic bags of waste so that they could sort it on the spot.”

Easter at Chamberlain, 80% Zero Waste - “Volunteers monitored each waste station.”

Brookby School Ag Day, 80% Zero Waste - “Bin monitors are essential to attendees putting waste in the right bin.”

In the hope of discovering some insights to the impact of our customer engagement volunteers we staggered this aspect of the

trial across the three major stores so that Site 1 and 3 had CTD personnel present from Day 1 to Day 14 (weeks 1 and 2), while in contrast Site 2 had them from Day 22 to Day 35 (weeks 4 and 5).

Based on information provided to us by the stores we instructed our volunteers to undertake their customer engagement between the hours of 11am-1pm or 3-5pm. Below is a timetable of the volunteer hours.

A coloured square indicates a volunteer was present at that location to engage the customers for at least 2 hours. In some instances, we had enough volunteers to deliver 2 x 2-hour shifts on the same day. The ‘S’ indicates that surveys were also taken by the volunteers at that time.

|        | Mon | Tue | Wed | Thu | Fri | Sat | Sun |                        |
|--------|-----|-----|-----|-----|-----|-----|-----|------------------------|
| WEEK 1 | S   | S   | S   | S   |     | S   | S   | Huckleberry New Lynn   |
|        | S   |     |     |     |     | S   |     | Huckleberry Glen Innes |
|        | S   | S   | S   | S   | S   | S   | S   | Commonsense            |
| WEEK 2 |     |     |     |     |     |     |     | Huckleberry New Lynn   |
|        |     |     |     |     |     |     |     | Huckleberry Glen Innes |
|        |     |     |     |     |     |     |     | Commonsense            |
| WEEK 3 |     |     |     |     |     |     | S   | Huckleberry New Lynn   |
|        |     |     |     |     |     | S   |     | Huckleberry Glen Innes |
|        |     |     |     |     |     | S   |     | Commonsense            |
| WEEK 4 |     |     |     |     |     |     |     | Huckleberry New Lynn   |
|        |     |     |     |     |     |     |     | Huckleberry Glen Innes |
|        |     |     |     |     |     |     |     | Commonsense            |
| WEEK 5 |     |     |     |     |     |     |     | Huckleberry New Lynn   |
|        |     |     |     |     |     |     |     | Huckleberry Glen Innes |
|        |     |     |     |     |     |     |     | Commonsense            |
| WEEK 6 |     |     |     |     |     | S   | S   | Huckleberry New Lynn   |
|        |     |     |     |     |     | S   | S   | Huckleberry Glen Innes |
|        |     |     |     |     |     | S   | S   | Commonsense            |

We recruited our volunteers through advertising on the Do Good Jobs website and posting on our Go Well social media channels. We had a total of 15 individuals contribute approximately 127 hours.

To inform the volunteers about the trial and “train” them on their role we ran two Zoom calls in the week prior to the trial beginning. For those who couldn’t attend or who signed up during the trial period we explained everything to them over a phone call. We provided volunteers with flyers to hand out that showed a flow chart of the scheme (see Branding Assets).

Although all our volunteers were enthusiastic and engaged with the purpose of the scheme, ultimately due to our limited resources to train them there was a large range of skills and subject knowledge.

# What we learned

This 6 week trial provided a range of valuable learnings as to the feasibility of such a product stewardship scheme being rolled out across New Zealand. These learnings came from a combination of the quantifiable data we collected and the anecdotal information we collected through setting up, delivering, and reviewing the trial.

What was very clear to us is that 6 weeks is simply not long enough for a community to adopt a new take-back product stewardship scheme such as this, in any significant way.

Only 15% of our survey respondents said that they shop at the participating stores “a few times a week” or “every day” (14.5% and 0.5% respectively), while 75% said they shop “about once a week” or less (see results below).

With this level of frequency to these stores (and drop off sites) it is reasonable to assume a significant number of customers who purchased participating products / packaging would have forgotten to bring back that packaging during the trial, or didn't visit the store again within the 6 weeks.

This assumption is further supported by the data on what items we saw returned the most. These were the packaging for chocolate (particularly the single serving size), crisps, chicken and red meat, all products that are most commonly consumed within a few hours to a few days of purchase. We had significantly fewer products like coffee and dry ingredients returned.

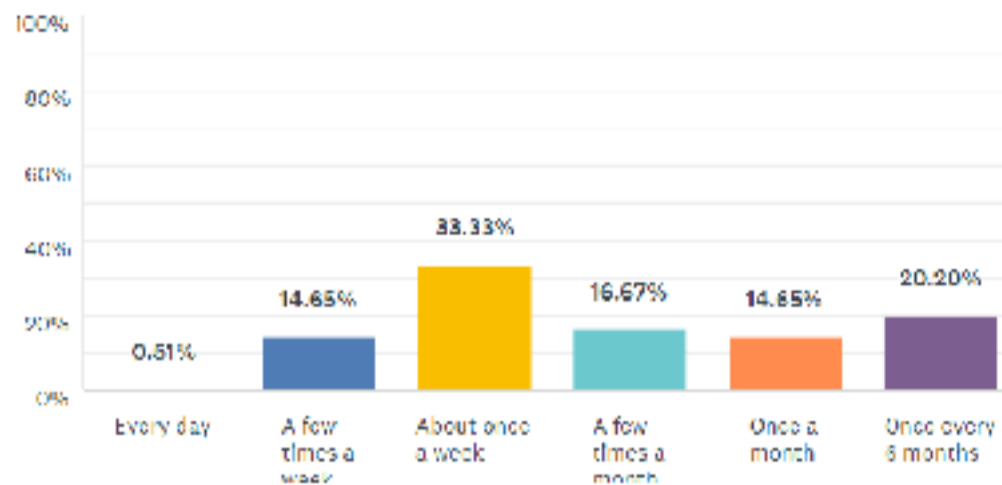
Six weeks was also not long enough to see any significant trends in the data we collected. We are not in a position to claim whether the colour coding and our human to human customer engagement communications strategy had a material impact on contamination rates or return rates.

However, based on our survey results and our interactions with store staff, customers, and other stakeholders we strongly believe this colour-coding and human to human engagement methodology is the right one for a compostable packaging stewardship scheme (and any other packaging stewardship scheme).

# Survey Results

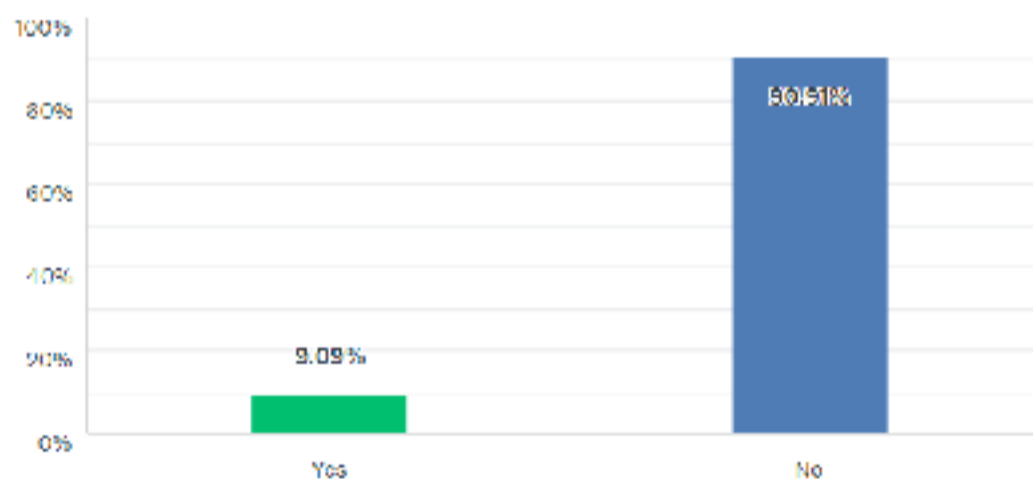
## How often do you shop at this store?

Answered: 198 Skipped: 1



## Have you shopped with this store online?

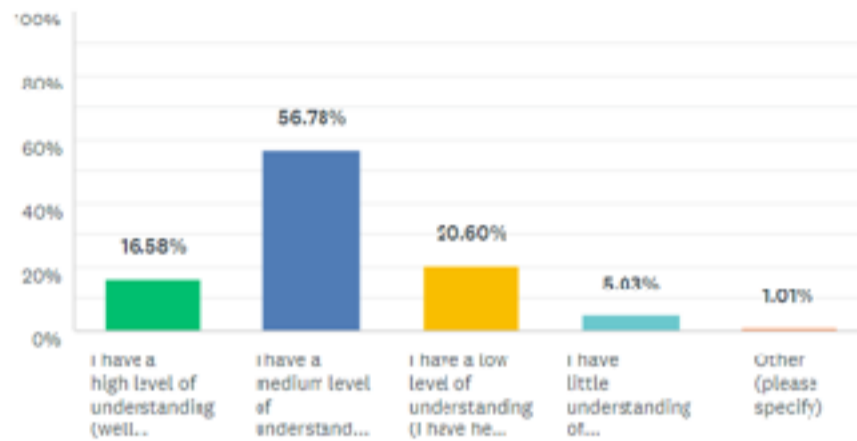
Answered: 198 Skipped: 1



As already highlighted we noted the infrequency that customers were visiting the stores. We have no other data to compare this to but are curious to know if this is common across all supermarkets, or is it a result of COVID-19 and are people shopping less frequently? We can rule out customers shopping online with 91% stating they have never shopped online at the stores we surveyed. This statistic highlights to us the drop-off model is one that works with current shopping habits.

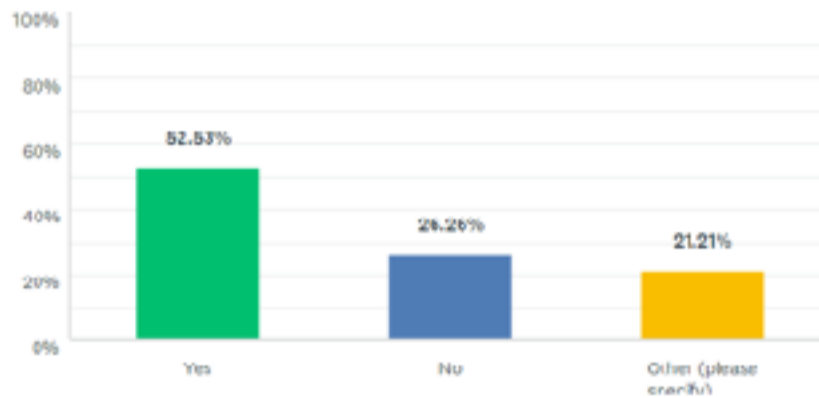
### How would you rate your understanding of compostable packaging?

Answered: 199 Skipped: 0



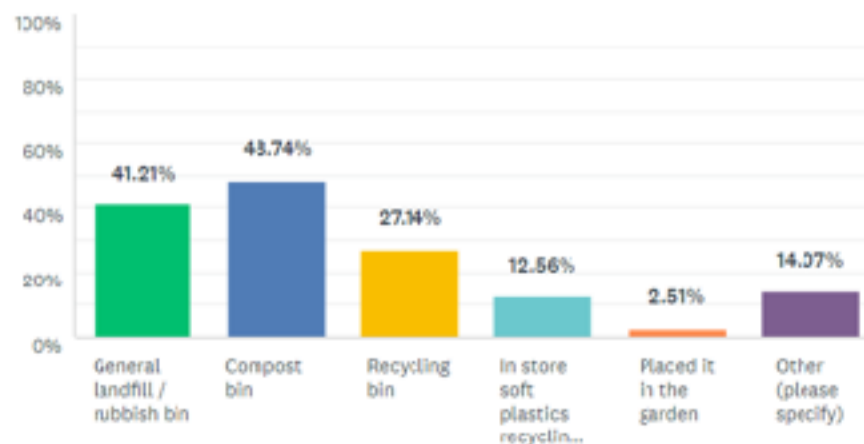
### Do you currently choose a product or brand over another, because it uses compostable packaging?

Answered: 198 Skipped: 1



### How have you disposed of compostable packaging in the past?

Answered: 199 Skipped: 0

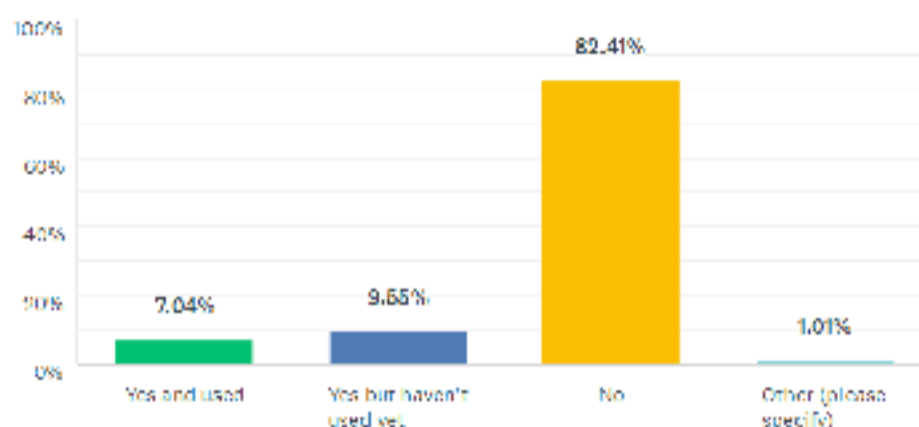


Although 74% of respondents stated that they have a medium or high level of understanding about compostable plastics, 39% had disposed of it in the Soft Plastics Recycling or in kerbside recycling. Although 41% stated they have disposed of it in the landfill bin - this is for many, the best option. The “compost bin” option referred to home composting.

We were surprised to find 53% currently choose one brand over another because of the compostable packaging. This is perhaps reflective of the demographic of the customers we’re surveying.

### Have you heard of, or used, this collection scheme offered by this store before?

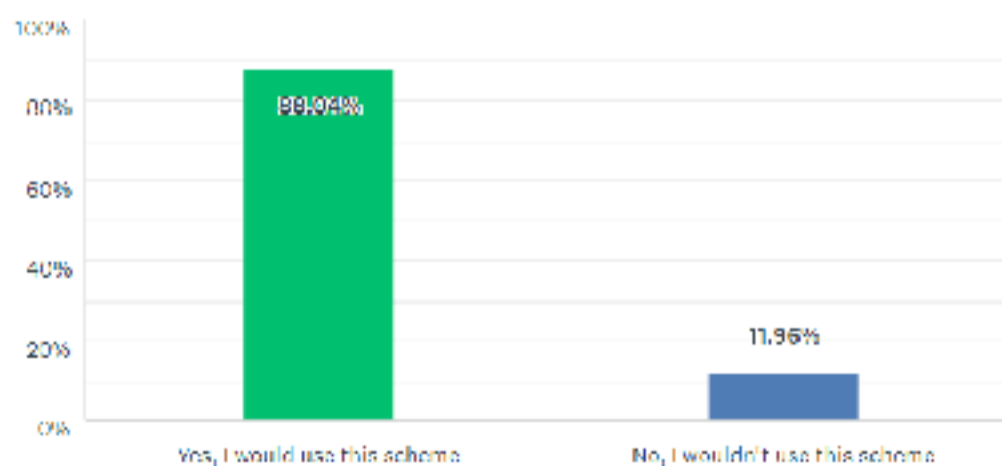
Answered: 199 Skipped: 0



Unsurprisingly very few people had heard of the CTD scheme or seen the branding assets although we did see a small increase across the 6 weeks.

### Is this scheme something you would, or wouldn't use?

Answered: 104 Skipped: 15

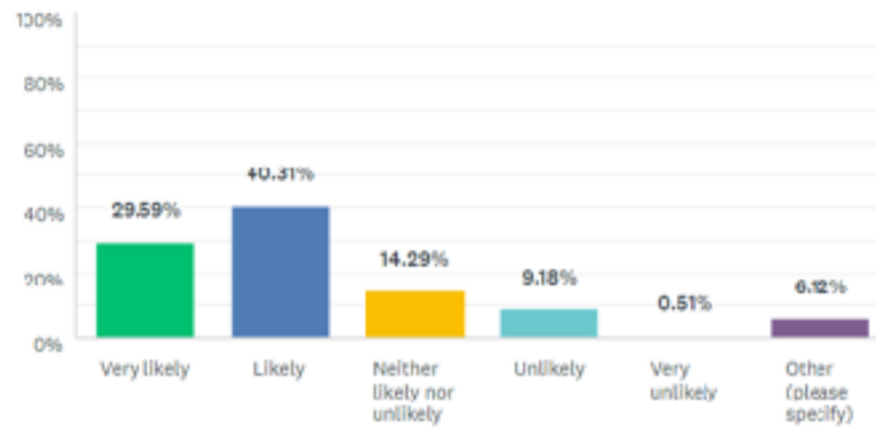


This was one of the most resounding findings for us with 88% of respondents saying they would use this scheme.



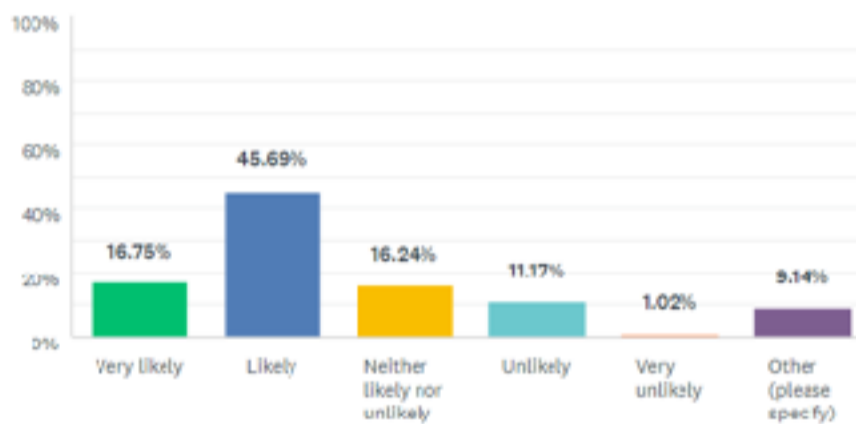
How likely or unlikely would you be to shift from a product or brand you currently purchase, to a product or brand participating in this collection service?

Answered: 196 Skipped: 3



How likely or unlikely is it that you would support the products or brands within this collection scheme, if the price was slightly higher?

Answered: 197 Skipped: 2



We were surprised with the percentage of people who were likely or very likely to shift products based on compostable packaging and were willing to pay extra. Again it's worth noting the demographic of these shoppers.

# “ Comments

In your own words, what do you most like or dislike about this collection scheme?

**Great for brands to highlight their environmental commitments**

**Allows to compost without using home compost as I don't like the idea of putting packaging in my home compost because of the inks and stuff**

**This is great as I live in an apartment.**

**I would love to see this in the larger supermarkets**

**I find packaging easy to understand but I understand other people's confusion. I might use this if it was in my supermarket.**

**It's inspiring that supermarkets are supporting this and creating awareness**

**I already pay more for eco products so paying a bit more is fine**

**I like that this helps to make it clear how we can avoid landfill**

# Bin Audits

Monday night each bin was emptied of the week's collection and the contents were sorted into the following categories:

- Authorised packaging - (packaging items that were part of the trial and had a CTD pink sticker)
- Compostable contamination - (e.g fruit skin, compostable coffee cups),
- Non-compostable contamination - (e.g. glass, non-compostable plastics).

These 3 categories are important as they define/highlight different consumer behaviours:

- Stickered items in the bin show an individual has correctly understood the stewardship scheme and participated with an approved product.

- Compostable contamination shows an individual has identified the bin is for compostable items but has not understood that the stewardship program is only for items that have been approved.
- Non-compostable contamination shows the person has not understood the bin is part of a stewardship program.

Once sorted, the contents of each bin were photographed and recorded. We put together the following data sets.

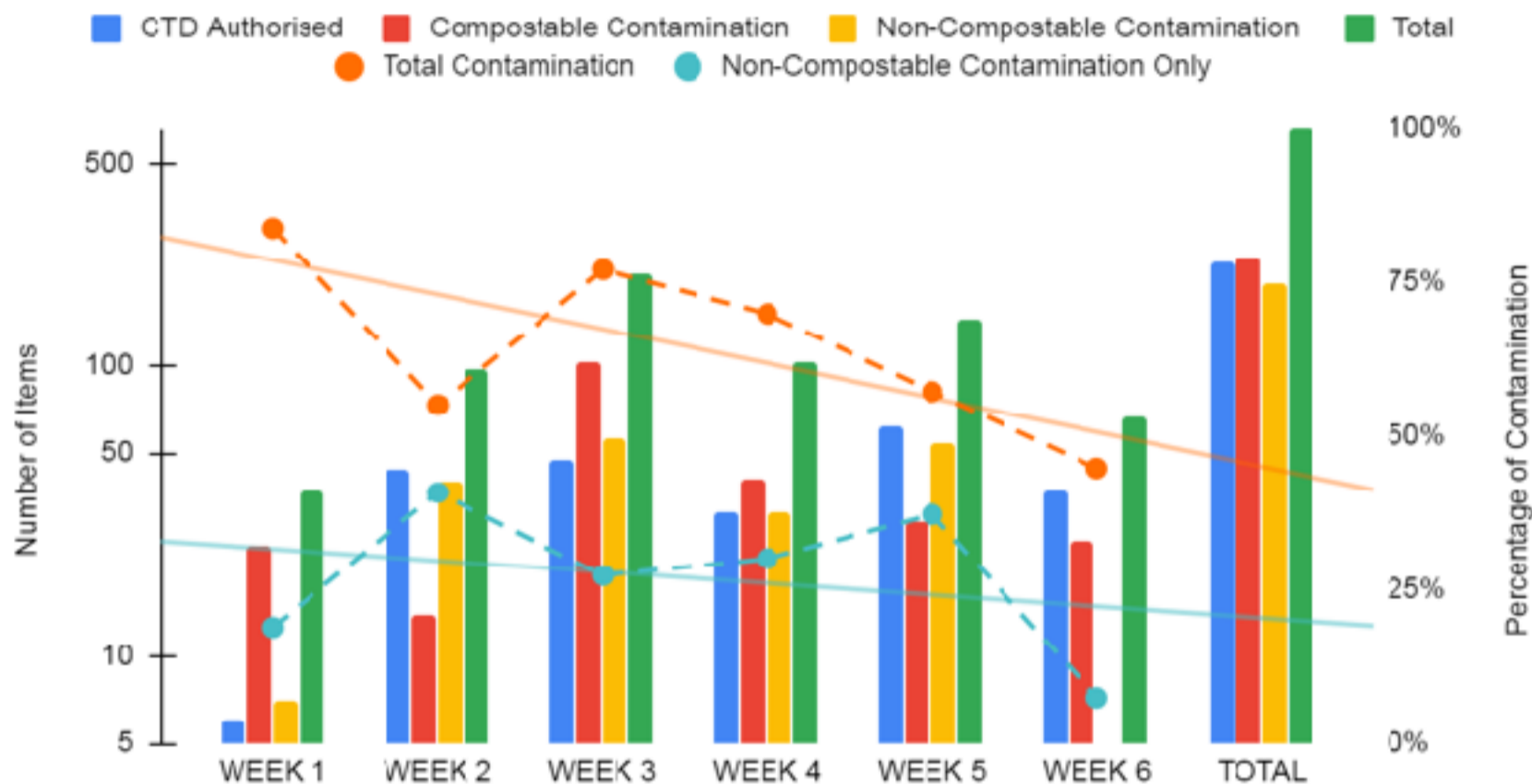
## Contaminations categories

Total contamination rates are equal to the combined total of compostable contamination plus non-compostable contamination divided by total items collected. Non-compostable contamination only rates excludes compostable contamination items.

|              | Number of CTD Authorised Packaging Items | Number of Compostable Contamination Items | Number Non-Compostable Items | Total      | Total Contamination % | Non-Compostable Contamination only |
|--------------|--|---|------------------------------|------------|-----------------------|------------------------------------|
| WEEK 1       | 6  | 24  | 7                            | 37         | 84%                   | 19%                                |
| WEEK 2       | 44                                       | 14  | 40                           | 98         | 55%                   | 41%                                |
| WEEK 3       | 47                                       | 102                                       | 56                           | 205        | 77%                   | 27%                                |
| WEEK 4       | 31                                       | 41  | 31                           | 103        | 70%                   | 30%                                |
| WEEK 5       | 62                                       | 29  | 54                           | 145        | 57%                   | 37%                                |
| WEEK 6       | 37                                       | 25  | 5                            | 67         | 45%                   | 7%                                 |
| <b>TOTAL</b> | <b>227</b>                               | <b>235</b>                                | <b>193</b>                   | <b>655</b> | <b>65%</b>            | <b>29%</b>                         |

# All Stores

Total items collected weekly per category and contamination rates - All Stores.



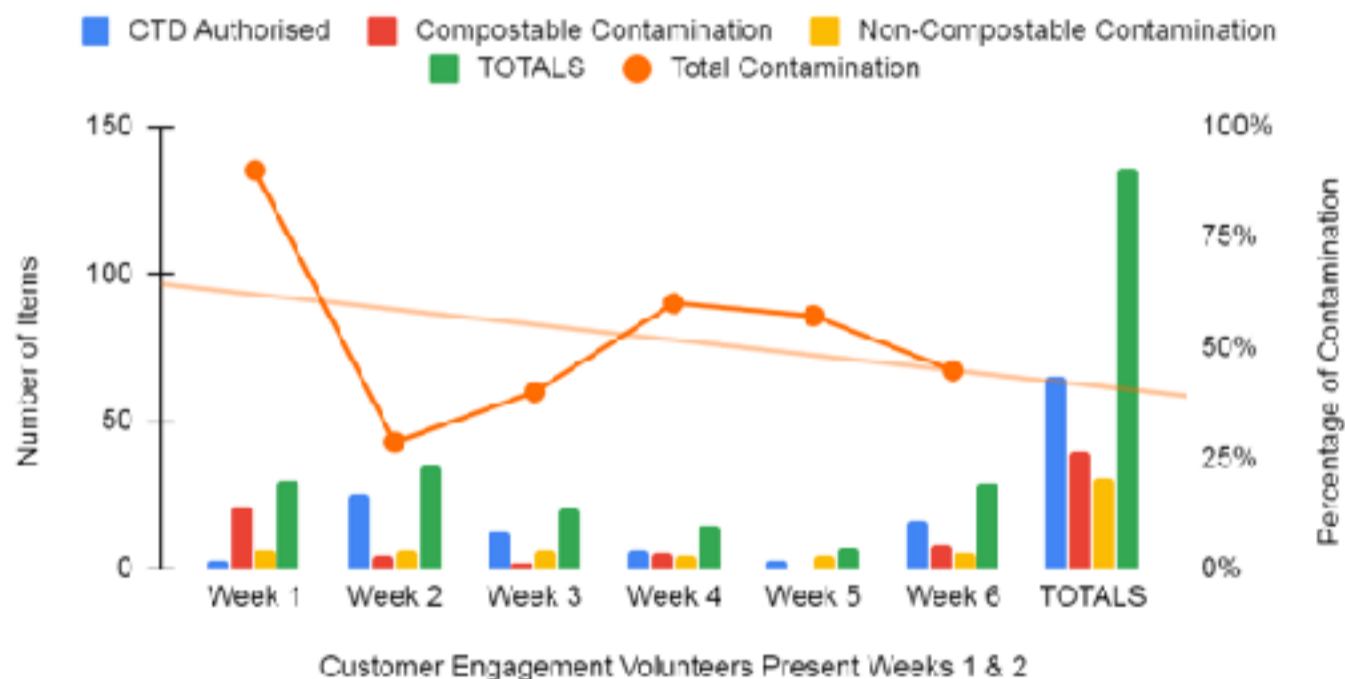
The above graph shows the total items collected per category across all four stores each week of the trial, and the rate of total contamination vs non-compostable only contamination. It also indicates the trend lines for both contamination rates.

# Weekly totals collected and contamination rates across individual stores

## HUCKLEBERRY NEW LYNN

|        | CTD Authorised | Compostable contamination | Non-compostable contamination | TOTALS | Total Contamination |
|--------|----------------|---------------------------|-------------------------------|--------|---------------------|
| Week 1 | 3              | 21                        | 6                             | 30     | 90%                 |
| Week 2 | 25             | 4                         | 6                             | 35     | 29%                 |
| Week 3 | 12             | 2                         | 6                             | 20     | 40%                 |
| Week 4 | 6              | 5                         | 4                             | 15     | 60%                 |
| Week 5 | 3              | 0                         | 4                             | 7      | 57%                 |
| Week 6 | 16             | 8                         | 5                             | 29     | 45%                 |
| TOTALS | 65             | 40                        | 31                            | 136    | 52%                 |

### Packaging Items Collected Per Classification and Total Contamination - New Lynn



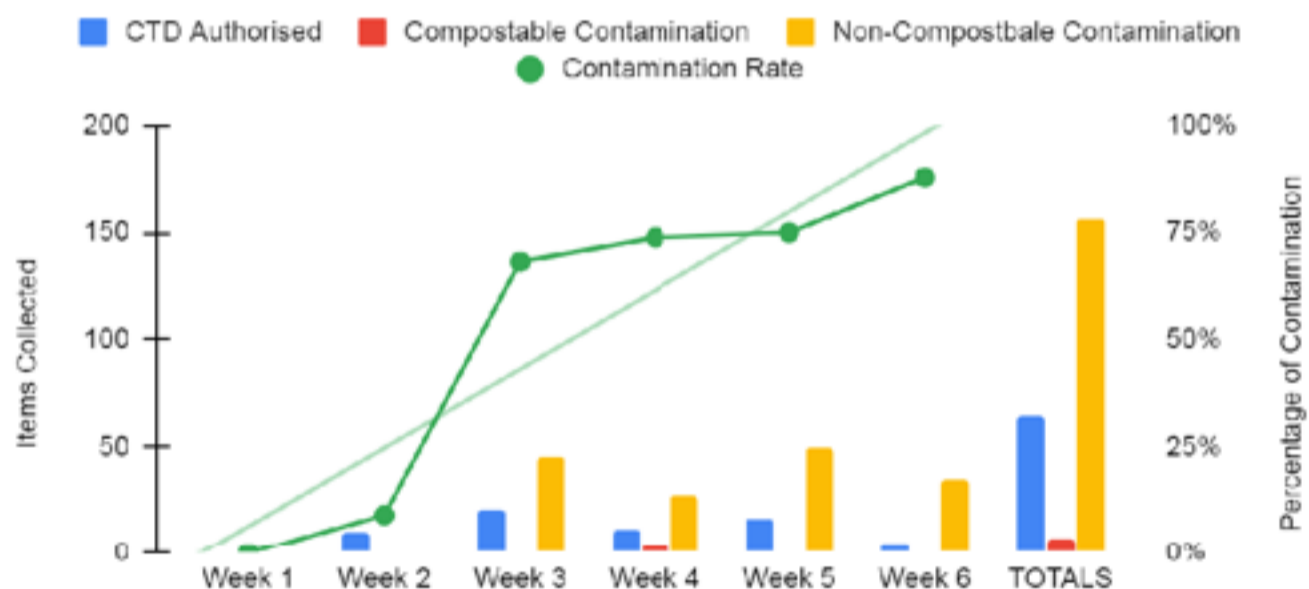
#### Observations:

New Lynn had the Customer Engagement Volunteers present on weeks 1 and 2 of the trial. Received the lowest number of returned items (excluding the Trade Aid store) at 136, yet had a far lower contamination rate compared to Glen Innes and Commonsense

### HUCKLEBERRY GLEN INNES

|        | CTD Authorised | Compostable Contamination | Non-compostable Contamination | TOTALS | Total Contamination |
|--------|----------------|---------------------------|-------------------------------|--------|---------------------|
| Week 1 | 1              | 0                         | 0                             | 1      | 0%                  |
| Week 2 | 10             | 1                         | 0                             | 11     | 9%                  |
| Week 3 | 21             | 0                         | 45                            | 66     | 68%                 |
| Week 4 | 11             | 4                         | 27                            | 42     | 74%                 |
| Week 5 | 17             | 1                         | 50                            | 68     | 75%                 |
| Week 6 | 5              | 1                         | 35                            | 41     | 88%                 |
| TOTALS | 65             | 7                         | 157                           | 229    | 72%                 |

Packaging Items Collected Per Classification and Total Contamination - Glenn Innes



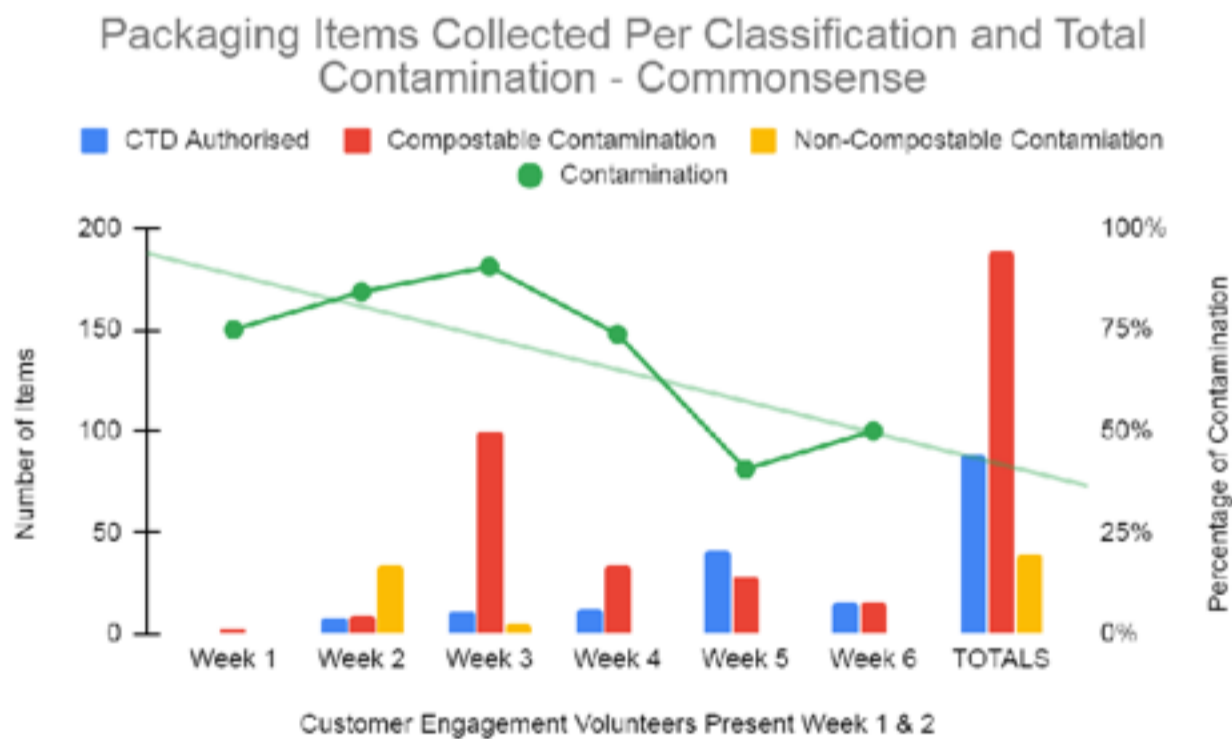
Customer Engagement Volunteers Present Weeks 4 and 5

**Observation**

Glen Innes had Customer Engagement Volunteers present on weeks 4 and 5 of the trial. At Glen Innes we saw significantly higher rates of contamination (and the only store where the contamination was trending upwards) but almost all of which was from non-compostable contamination. We believe this is due to the bin being positioned next to the soft plastics recycling collection bin.

## COMMONSENSE

|        | Participating Packaging | Compostable Contamination | Non-compostable Contamination | TOTALS | Total Contamination |
|--------|-------------------------|---------------------------|-------------------------------|--------|---------------------|
| Week 1 | 1                       | 3                         | 0                             | 4      | 75%                 |
| Week 2 | 8                       | 9                         | 34                            | 51     | 84%                 |
| Week 3 | 11                      | 100                       | 5                             | 116    | 91%                 |
| Week 4 | 12                      | 34                        | 0                             | 46     | 74%                 |
| Week 5 | 41                      | 28                        | 0                             | 69     | 41%                 |
| Week 6 | 15                      | 15                        | 0                             | 30     | 50%                 |
| TOTALS | 88                      | 189                       | 39                            | 316    | 72%                 |



### Observations

Commonsense had the Customer Engagement Volunteers present on weeks 1 and 2 of the trial. We had significant rates of contamination at Commonsense but this was dominated by compostable contamination and in particular compostable coffee cups.

## TRADE-AID

Only 8 individual packets were collected at the Trade Aid site. 6 of those were Trade Aid chocolate packets, with one compostable packaging item that was not authorised and 1 non-compostable muesli bar wrapper. Whilst it was expected that we would not collect as much at this site as others it was surprisingly low.

# Contamination

When evaluating these contamination rates it is worth remembering the small sample size of the trial (total 655 items collected - an average of 109 items per week).

Total items (and percentage) collected over the 6-weeks:

- Authorised packaging - 227 items (35%)
- Compostable contamination - 233 items (36%)
- Non-compostable contamination - 195 items (29%)

With 35% of collected materials being authorised stewardship packaging and a further 36% being compostable contamination, 71% was in fact compostable in nature and accepted by our commercial compost partner.

## Compostable Contamination

Compostable contamination represented the largest number of collected items at 235 (CTD Authorised = 227). This was significantly dominated by compostable coffee cups with 179 (76%). Of these 164 were collected at the Commonsense bin - 100 being in Week 3 alone (23, 26, and 15 in Weeks 4,5 and 6 respectively). Of the coffee cups that were collected many were stacked together indicating it was one person depositing multiple cups they had likely stored or collected from others.

The remaining compostable contamination being other compostable packaging and food scraps.

The contamination from non-authorized compostable packaging signifies to us the following likely conclusions:

- There were customers who are highly informed about compostable packaging and were aware the contents of our bins were going to a commercial composter;
- Customers were informed by our customer engagement volunteers of the above; or,
- Customers mistook the collection bins for a standard organics collection bin (remembering the bins lids were green)

The compostable contamination provides an interesting insight into the levels of awareness and confusion around compostable packaging. The depositors of those compostable items were aware they needed to be taken to a commercial composting site but either not aware of the scheme requiring packaging to be authorised or disregarded the need for the authorisation. This is problematic for the scheme due to the importance of keeping the final compost free of contaminants.

## Authorisation of Compostable Packaging

Due to the lack of regulation relating to compostable packaging in New Zealand there is a wide range of compostable packaging being used in the market, and a wide range of compostable (and biodegradable) claims being used. This scheme aims to facilitate the “cleaning up” of this confusion and exploitation by requiring the packaging to meet compostability certification standards to be authorised to participate in the scheme.

In essence this product stewardship scheme could also act as an independent compostable packaging authoriser for the New Zealand market. See our Feasibility Report for all the details on certifications and scheme authorisation.

The collection of the non-authorized compostable packaging items also demonstrates the potential risks for “freeloaders” to exploit such a scheme - businesses who do not pay into the running of the service but encourage their customers to use it.

Again we have tried to negate this in the design of the scheme by requiring the scheme logo (a pink dot) to be displayed on the front of every authorised packet, and the clear communications that only packaging displaying the pink dot can go in the bin displaying the pink dot. Connect the dots.

The risk of “freeloaders” has for the most part been eradicated now by the government's new legislation requiring businesses to be part of mandatory stewardship scheme.

## Compostable Coffee Cups

Given the dominance of coffee cups in the compostable contamination and the ease of identifying the brands and manufacturers, it puts forward the obvious option of discussing including these items in a scaled up scheme. See Conclusion.

## Other Organic Material

In addition to the unauthorised compostable packaging contamination there was the issue of other organic material e.g. banana skins and apple cores. Although this offers no threat to the compost (in fact composters often agree to accept compostable packaging to gain access to more of the nutrient organic material), it is an issue for the stores that agree to host a collection bin. Rotting food will attract flies and potentially vermin. For this reason we do not accept organic material in the scheme. Only packaging with the pink dot.



### Non-compostable contamination

The remaining 29% was non-compostable contamination which will contaminate the compost. Our collection partner (Super Trash) have an acceptable contamination rate of 1% which is not comparable to the amount of contamination we were receiving.

This is problematic for the scheme and illustrates more needs to be built into the operations to ensure the contamination levels reach the required standard. This is further discussed in our Conclusion.

The scheme was designed to try and avoid the need to sort the collected material due to the higher running costs this would create, but a post collection sorting process is an optional extra that we would recommend including in a secondary trial of this scheme.

Technology and bin design could perhaps play a part here in the way of automated sorting. See Bin Design and Technology sections for further discussion.

The levels of non-compostable contamination seem to also be influenced by the location of the collection bins. We found there to be more “carpark trash” in the way of single packaging items such as cans, bottles, and single-item food packaging in the New Lynn store. We believe that this was due to our collection bin being outside the building and the first bin customers saw on entry to the store, with packaging items they had removed from their car in hand.

At Glen Innes, where the bin was stationed right beside the Soft Plastics Recycling bin, we saw significantly more soft plastic contamination.

### Non-stickered Authorised Packaging

The authorised packaging we collected contained a majority of pink dot stickered items, but it did also include some unstickered authorised packaging. It also contained some authorised packaging that had not been brought from the participating sites, indicated by pricing labels from other stores on the packets.

This finding indicated to us:

- There is a need for such a scheme as this to be stationed across multiple sites; and,
- There is a portion of the population willing to visit a specific store because it has a compostable plastics collection scheme;

### Other Contamination Rates

To give some context to the above figures an audit by the Soft Plastics Recycling scheme recently reported “7.1% of materials collected were deemed to be ‘contaminated’ – either not soft plastics or food contaminated materials. This is a reduction from 8.7% in the 2018 survey, and 9% in the 2017 survey which shows that consumers are becoming better educated about how and what to recycle.” ([https://www.recycling.kiwi.nz/application/files/9815/8845/5328/The\\_Wrap\\_Up\\_-May\\_2020.pdf](https://www.recycling.kiwi.nz/application/files/9815/8845/5328/The_Wrap_Up_-May_2020.pdf))

### Bin Design

Although we have grand plans for a bespoke bin design to be part of an expanded scheme, our budget constraints for this trial meant we had to borrow 3 x 120L wheelie bins from SuperTrash. Although we placed a large pink sticker on the front of the bin this was low to the ground and easily missed. We also had ‘backboards’ on the bins to provide further information (see Branding Assets).

In hindsight these backboards contained far too much text and we should have used imagery (similar to what we used for the flyers) to convey the scheme.

We also believe the green lid mistakenly implied to people it was a compostable bin rather than a CTD bin and caused the assumption that it would accept all compostable packaging and / or food scraps.

# Return Rates

We asked the 3 larger stores to provide us with sales data for the 6 weeks across the 7 participating brands to help us analyse return rates (percentage of authorised packaging items sold that were returned to the collection bin).

| Brand           | Number of Participating Packaging Items Sold During 6 Weeks | Number of Participating Packaging Items Returned per Brand |           |           |           |           |          |           |             |
|-----------------|---|--|-----------|-----------|-----------|-----------|----------|-----------|-------------|
|                 |   | Week 1   | Week 2    | Week 3    | Week 4    | Week 5    | Week 6   | Total     | Return Rate |
| Kokako          | 18  |  |           | 2         |           |           |          | 2         | 11%         |
| Organic Butcher | 373   |  | 1         | 5         | 1         | 2         |          | 9         | 2%          |
| Proper Crisps   | 54  |  |           | 1         | 4         | 2         |          | 7         | 13%         |
| Bostock Chicken | 330   |  | 4         | 5         | 2         | 4         | 2        | 17        | 31%         |
| Trade Aid       | 230   | 1  | 5         | 3         | 3         | 7         | 1        | 20        | 8%          |
| Ceres           | unavailable   |  |           |           |           |           |          |           |             |
| Commonsense     | n/a   |  |           |           |           |           |          |           |             |
| <b>TOTALS</b>   | <b>1013</b>   | <b>1</b>   | <b>10</b> | <b>16</b> | <b>13</b> | <b>15</b> | <b>3</b> | <b>55</b> | <b>13%</b>  |

| Brand           | Number of Participating Packaging Items Sold During 6 Weeks | Number of Participating Packaging Items Returned per Brand |           |           |          |          |           |           |             |
|-----------------|---|--|-----------|-----------|----------|----------|-----------|-----------|-------------|
|                 |   | Week 1   | Week 2    | Week 3    | Week 4   | Week 5   | Week 6    | Total     | Return Rate |
| Kokako          | 51  |  | 1         |           | 1        |          |           | 2         | 4%          |
| Organic Butcher | 604   |  | 1         | 1         | 2        |          | 1         | 5         | 1%          |
| Proper Crisps   | 301   |  | 1         | 3         | 2        | 1        |           | 7         | 2%          |
| Bostock Chicken | 584   |  | 21        |           | 1        | 1        | 2         | 25        | 4%          |
| Trade Aid       | 212   | 3  |           | 3         |          | 1        | 13        | 25        | 12%         |
| Ceres           | unavailable   |  |           |           |          |          |           |           |             |
| Commonsense     | n/a   |  |           |           |          |          |           |           |             |
| <b>TOTALS</b>   | <b>1752</b>   | <b>3</b>   | <b>24</b> | <b>12</b> | <b>6</b> | <b>3</b> | <b>16</b> | <b>64</b> | <b>5%</b>   |

| Brand           | Number of Participating Packaging Items Sold During 6 Weeks | Number of Participating Packaging Items Returned per Brand |          |           |           |           |           |           |             |    |
|-----------------|---|--|----------|-----------|-----------|-----------|-----------|-----------|-------------|----|
|                 |   | Week 1   | Week 2   | Week 3    | Week 4    | Week 5    | Week 6    | Total     | Return Rate |    |
| Kokako          | 49  |  |          | 1         | 1         |           |           | 1         | 3           | 6% |
| Organic Butcher | 515   |  |          | 2         |           | 2         | 4         | 8         | 2%          |    |
| Proper Crisps   | 114   | 1  | 1        | 0         | 9         | 32        | 0         | 43        | 38%         |    |
| Bostock Chicken | 556   | 0  | 6        | 2         | 2         | 0         | 6         | 16        | 3%          |    |
| Trade Aid       | 355   | 0  | 0        | 4         | 0         | 4         | 2         | 10        | 3%          |    |
| Ceres           | 84  | 0  | 1        | 0         | 0         | 2         | 1         | 4         | 5%          |    |
| Commonsense     | 234   | 0  | 0        | 2         | 10        | 1         | 1         | 14        | 6%          |    |
| <b>TOTALS</b>   | <b>1907</b>   | <b>1</b>   | <b>8</b> | <b>11</b> | <b>22</b> | <b>41</b> | <b>15</b> | <b>98</b> | <b>9%</b>   |    |

Due to the short length of the trial and small data sets there were no obvious trends in return rates across the 3 stores. The average return rate across the 3 stores and all brands was 9%. We have no other data to compare this to so can not comment on whether these return rates are high or low.

## Returned Items

We recorded each individual authorised item that was returned by brand. The following table shows the total number of authorised packaging items per brand, per store.

| Stores        | Trade Aid | Bostock   | Organic Butcher | Kokako   | Commonsense | Proper Crisps | Ceres    | TOTAL      |
|---------------|-----------|-----------|-----------------|----------|-------------|---------------|----------|------------|
| Commonsense   | 10        | 16        | 8               | 3        | 14          | 43            | 4        | 98         |
| New Lynn      | 25        | 25        | 5               | 2        | 0           | 7             | 0        | 54         |
| Glen Innes    | 20        | 17        | 6               | 2        | 0           | 7             | 5        | 60         |
| <b>TOTALS</b> | <b>55</b> | <b>58</b> | <b>22</b>       | <b>7</b> | <b>14</b>   | <b>57</b>     | <b>9</b> | <b>222</b> |

Unsurprisingly we saw the largest number of returned items from the products that are commonly consumed inside a few days of purchasing i.e. chocolate, crisps, chicken and meat. And very few packaging items for coffee, and pantry goods which typically last for weeks to months.

Although the packaging returned to a store may not have been purchased from that store, increasing return rates would be a measure of success for a product stewardship scheme.

## Technology and Innovations

Through the course of this project we have investigated technology solutions that could help with public engagement, return and contamination rates, data collection, and the overall success of the scheme.

We have had conversations with two organisations who use image recognition technology and AI to identify a certain packaging type. This technology can then be used to control a particular mechanism that diverts the packaging or to set off some form of notification such as an alarm, gamified noise, lights, or a message on a screen. Or all of the above.

Such technology could have significant impacts on contamination and return rates by:

- Engaging people in the bin and the scheme;
- Allowing reward / incentive schemes to be set up (e.g. points on a club card per returned item, discounts on participating brands, spot prizes);
- Data collection;
- Additional revenue source through on screen advertising;
- Competing communities / stores against each other; (e.g. best return rates, least contamination)
- Competing brands against each other (e.g. best return rates)

Such technology has additional capital costs but the potential for a hugely more efficient and cheaper scheme long term.

# Post Trial Store Manager Survey Results

Following the trial we sent store managers a survey to understand the impacts it had on their operations and hear their thoughts of the scheme overall.

**Out of 5 how well do you think this trial was run? 1- it was a shambles. 5- very slick**

Huckleberry - 3  
Commonsense - 5

**In a few sentences could you explain what your overall impressions of the program were? Was it a good or bad solution to the issue of compostables, could you see it expanding across New Zealand? Is your store the right place for something like this?**

Huckleberry - The program itself is pretty good, people just needs to be more educated regarding composting

Commonsense - I am really grateful we were asked to be a part of this. We fully support the program, and recognize the hard work that your team put in to getting this into action. I hope that our store was a suitable location, and we would be happy to support the program in some way again.

**Could you think of 3 or 4 things that were positives of hosting the scheme?**

Huckleberry - Great Idea, Good sized bins

Commonsense:

- Education, for both us as a staff team and our customer base
- Deeper understanding of the journey that compostable packaging takes
- Conversation starting opportunity within the store

**On a scale of 1 - 5 how positive was this scheme for your store ? (1 - a very negative impact. 3 - neutral impact. 5- very positive impact)**

Huckleberry - 3  
Commonsense - 5

**Could you think of 3 or 4 things that were negatives of hosting the scheme or would you like to see improved if you hosted the program again?**

Huckleberry - Some customers feedback was there were only limited brands that can be put in the bin

Commonsense - More promotion / collaboration if we had time (Sorry we didn't, COVID-19 has had us all tied up this year!)

**How did you feel your team coped with the scheme being in place, how did they manage stickering, did they have to spend any time tending to the bin, did it cause any mess or smell?**

Huckleberry - Not really.  
Commonsense - No issues at all!!!! So well managed by yourselves and your awesome volunteers!

**On a scale of 1-5 how much added time did this scheme add to your staff? 1- no time at. 5- a huge drain in staff time.**

Huckleberry - 1  
Commonsense - 1

**Was it of value to your customers, do you think it was a feature in the store, did it affect customer behaviour?**

Huckleberry - The idea was great, but some people are not into composting yet. Hopefully we can push it and educate more people regarding composting

Commonsense - Hard to know at this stage. I think with a longer presence it may have gained more customer involvement

**On a scale of 1-5 how valuable do you think this scheme was for your customers? 1- no value. 5 - significant value-added**

Huckleberry - 4  
Commonsense - 3

**Do you have any general thoughts on the compostable packaging you have in store? Do customers prefer it, does it confuse them, do you feel confident selling it?**

Huckleberry - n/a

Commonsense - I think there is a level of confusion, and is a potential area of education we could work on / offer from our company.

**Have you had any interest or feedback from customers since the end of the program?**

Huckleberry - They wished they can put other brands on the bin and other companies will cooperate with the program

Commonsense - Not to my knowledge (Except a few returned packages after the bin had been removed).

**On a scale of 1-5 how much interest about the scheme have you had from your customers? 1- no customer has asked about it. 5- we've had huge interest in the scheme**

Huckleberry - 2  
Commonsense - 2

**Out of 5 how keen would you be for this to be a permanent scheme in your store?**

Huckleberry - 2  
Commonsense - 4

# Bin Innovations

## One Bin

New Zealand start-up in the early stages of product development and participants in this year's Callaghan Innovation C-Prize competition.

“The aim of our product, OneBin, is to reduce the contamination in recycling streams, thus reducing the total amount of recyclable material going to landfill. Our approach is to see it, sort it, solve it.

To do this, OneBin uses the latest artificial intelligence technology to identify and separate recyclables from waste. This technology will also enable OneBin to intuitively perform waste audits, report the fill level of the bin and maintenance issues, and generate real-time reports – making recycling more convenient and reducing the opportunity for human error.”<sup>1</sup>

You can watch a video of their technology in action here:

<https://rb.gy/e2pcrn>

We met with the team at One Bin on multiple occasions to get an idea of the assistance this technology can provide compostable plastics at its current level of development. We worked through a lot of potential issues with the One Bin team such as items being delivered to the bin in larger bags filled with compostables or items being scrunched into tight balls making identification hard. Carl and the team had a variety of real world solutions from Infrared printing and the use of fractal patterns to aid in identification and the use of holding pens within the bin for processing of larger bulk drop offs. The One Bin team were confident these solutions could be delivered at a reasonable price.

It is also worth noting the properties of many of the compostable packaging items mean that they are heavier than traditional plastics at about double the weight and they unfold very quickly when scrunched up which aids in recognition and processing.

We sent the One Bin team a selection of the packaging that took part in our trial and they achieved the following results:

- 91 out of 98 (93%) correct identification of the CTD Authorised packaging.
- 161 out of 171 (94%) correct identification of non authorised packaging (this comprised a range of other soft plastics such as crisp packets, biscuit packets, and mailers)

## TrashBot

CleanRobotics has built an autonomous system that uses robotics, computer vision and artificial intelligence to detect and separate landfill from recyclables. It does this “more accurately than human beings”, captures high quality waste data and it lets staff know

when it's getting full. Cloud connectivity allows individual units to learn from the global TrashBot fleet, becoming more intelligent over time. It also has a monitor for corporate communications, education and advertising.

See their website for more details <https://cleanrobotics.com/trashbot/>



# Where to from here?

In designing this scheme we engaged with dozens of relevant stakeholders (see our Feasibility Report for details) and we continually heard the same concerns being raised:

- No NZ compostable packaging certification;
- The relative cost of compostable packaging;
- The time and costs involved in getting whole-packet certification;
- Many composters not being willing or able to accept compostable packaging due to organic certification standards and / or it not being compatible with their existing processes;
- Home compostable vs commercially compostable confusion and competition;
- Compostable packaging causes contamination for other recycling streams.

It became clear to us that everyone agreed there needs to be an end-of-life scheme in place for compostable packaging - but no one knew where to start.

We made a start.

We have learnt a lot from this 6-week trial and have proven some solutions to the common concerns outlined above, but the major learning was that 6-weeks is simply not long enough. We therefore highly recommend that a second trial is undertaken with perhaps a dozen stores and across a variety of demographics / locations.

## Funding and Governance

We are yet to finalise the funding or governance models for this scheme and would look to engage with individuals who have experience in this space to finalise this. We do however want to see this scheme to be non profit driven. After costs, any additional revenue would be donated to charitable causes, invested in further development of the scheme, or reimbursed to participating brands. In terms of the cost to run the scheme we see it requiring an initial capital investment in the low millions to:

- Employ and train staff to manage each new drop-off site and participating store
- Develop and manufacture the collection bins
- Further develop the branding and communications strategy

Once the scheme is up and running we see it being relatively low cost to maintain. The costs being:

- Bin collection / emptying
- Delivery fee to composters
- Managing the scheme (staff, communications, PR etc)

From the conversations we've had with brands the most suitable payment structure seems to be an annual, quarterly, or monthly tiered fee based on revenue from the products using packing authorised by the scheme.

## Stickers vs Printing

Our original design involved the collected / returned packaging to be transported by Super Trash to Envirofert, located in Tuakau, for processing. With these two partners we could cover Auckland, Hamilton and surrounding areas which equates to around 40% of the NZ population. This was a key tipping point for many brands we spoke to in order for them to start print the scheme logo (in this case of this trial, a pink dot) on their packaging, negating the need to sticker.

## Urban Composting

Since designing this stewardship scheme there have been significant developments in urban composting (and urban food growing) and more localised processing of the compostable plastics has become a more feasible option to complement the commercial composter option.

Not only does this help engage local communities in such a scheme it would reduce "compost miles" and the related carbon footprint. A concern we identified in our Feasibility Report.

## Mandatory Product Stewardship

The announcement by the government of mandatory product stewardship schemes for plastics (and 5 other priority products) has created a flurry of interest in this scheme and we have been contacted by brands and industry bodies who are now showing significantly more interest in finding an end of life solution for this material type.

## Funding the Next Steps

The reality of the situation is we require funding to progress this scheme any further. Our intention from the beginning has been to find a solution to the compostable plastics end-of-life problem and be open and transparent about our intentions and project design. Hence the initial feasibility report we shared. We are open to working with other stakeholders to progress this scheme we have designed or see others take it forward, in its entirety or in parts, without our input.

# Considerations

Going through this trial, plus the many months of researching, ideating and creating beforehand we had many insights into related solutions and challenges. We overview these below:

## Packaging is for transport not storage

The fact many people store the products in their packaging once opened at home, increases the demands on that packaging. One of the challenges with compostable packaging is getting the balance between making a material that composts quickly and safely, but yet provides the protection to the product. By encouraging customers to empty their packaged products into airtight containers at home the demands on the packaging (specifically compostable) would decrease.

## Food safety of recycled plastics

The below excerpt is from an article published in the environmental SCIENTIST, February 2020 - The World Wakes Up to Waste.

*However, there have been growing scientific, regulatory and consumer concerns about the fact that “potentially endocrine-disrupting chemicals migrate from FCMs (food contact materials) into food”. This has changed some manufacturer behaviour, with many products now being advertised as phthalate- or bisphenol-free, but there has been no coordinated response and public exposure routes remain. If these routes are not closed off and recycled content becomes more common, there is an increasing risk that compounds that should not be in contact with food are present in FCMs made from recycled material.*

## Contaminating our Soils

This whole product stewardship scheme has been designed with a high level of confidence in the international compostability certification for compostable plastics. (See our Feasibility Report for details). Through our 5 + years of working with compostable plastics and composting infrastructure we are unaware of any issues relating to the toxicity of compost from compostable plastics or on the health of soils, plants or local biodiversity. However it is worth noting that compostable plastics are still relatively new to the international market and the longer term effects of them on compost and ultimately soils is somewhat unknown. This is why our scheme design require authorised packaging to achieve whole-packet certification .

*“The rise in compostable material used to replace single-use plastic opens new avenues for the potential for chemicals to re-enter the food chain and be released into the wider environment when compost is spread on soils. As the economy becomes more circular, the use of potentially harmful chemicals must be addressed.” - environmental SCIENTIST, February 2020 - The World Wakes Up to Waste.*

We believe the certification of compostable plastics requires leadership from industry and government to ensure the compostable plastics released into the New Zealand market are indeed safe for our compost and soils.

## Non compostable stickers

During the trial we noticed that stores or brands, on occasion, placed additional stickers to indicate a discount or new product. These stickers would need to be compostable and authorised by CTDs to participate in a scaled up scheme. A compostable sticker can be as simple as an unglossed, soy-ink sticker, with a non-toxic adhesive. These are common and inexpensive.

## Coffee Cups

Compostable coffee cups were by far the biggest single contaminant to our scheme, as they were not authorized to be part of it. However they are accepted by the commercial composter we worked with and are accepted by composters around the country (although not always willingly). This then raises the obvious question of having the compostable coffee cup manufacturers and brands join the scheme.

To make the communication simple and because of our limited resources we purposefully kept the 6-week trial to “soft” compostable plastics only. But due to the prevalence of compostable coffee cups in the NZ market and the level of public awareness towards them, compostable coffee cups joining a second trial should be investigated.

## COVID -19

It's tough to predict the impacts of the global pandemic on a proposed product stewardship scheme, but there is no doubt that it would cause added hassle for stores should lockdown rules be reinstated. Reports have also indicated that more people are purchasing their groceries online and this is potentially matched with reduced visits to a store. There could also be some concerns in spreading the virus through contaminated packaging. The SPR did suspend their collections during level 4 lockdown but had it back up and running in Levels 3, 2 and 1.

We believe the CTD scheme could also operate at those levels.

# Conclusion

We believe compostable plastics have an important role to play for New Zealand in a zero-waste, circular economy. They are not a silver bullet to the plastic pollution crisis, or the loss of value from plastic packaging we see on a global scale, but they most definitely are a part of the tool kit.

*“Today, 95% of plastic packaging material value, or USD 80–120 billion annually, is lost to the economy after a short first use. More than 40 years after the launch of the first universal recycling symbol, only 14% of plastic packaging is collected for recycling. When additional value losses in sorting and reprocessing are factored in, only 5% of material value is retained for a subsequent use. Plastics that do get recycled are mostly recycled into lower-value applications that are not again recyclable after use. The recycling rate for plastics in general is even lower than for plastic packaging, and both are far below the global recycling rates for paper (58%) and iron and steel (70–90%). In addition, plastic packaging is almost exclusively single-use, especially in business-to-consumer applications.”* - The New Plastics Economy: Rethinking The Future Of Plastics & Catalysing Action, Ellen MacArthur Foundation, 2017

Although we are in no way campaigning for a switch from non-compostable plastics to compostable plastics it must be noted how poorly the recycling of plastics has been operating for the entire history of the material, and the devastating environmental impacts it has had. If we are to solve this crisis we have to do things differently to those who have created it.

To solve the plastic pollution crisis we need more tools in the kit and compostable plastics should be one of those.

We agree with the New Plastics Economy that we need to “radically increase the economics, quality and uptake of recycling” (as does the government with their recent investment in recycling capabilities), but we don’t believe we can just recycle our way out of the plastic pollution crisis, or for that matter our climate crisis.

We also share the vision of the Office of the Prime Minister's Chief Science Advisor.

*“Essential single-use wrapping is partly replaced by fully compostable plastic made from waste biological sources. Following the early introduction of the compostable ‘spife’, more and more materials have been designed that provide closed-loop use of plastic type materials, fully tested for both environmental and human health. The applications are still quite niche so far, and have yet to break into the medical space, but opportunities are growing as material scientists, engineers and cutting-edge businesses get more adept at and designing packaging that uses these cool new materials.”* - Our vision for rethinking plastics, Office of the Prime Minister’s Chief Science Advisor.

Although we designed this product stewardship scheme for the New Zealand market we must be aware of the international forces at play, and the links between plastics, landfills, linear economics, and climate change.

To quote the IPCC we “require rapid, far-reaching and unprecedented changes in all aspects of society” to limit global warming to 1.5°C.

*“An investigation by The Guardian recently found that just 20 of these firms (oil and gas companies) are responsible for 35% of global greenhouse gas emissions since 1965. How will they adapt as fossil fuel demand wanes with the rise of renewable energy and battery power? The answer is plastic – and that shift is already well underway.”* - <https://theconversation.com/fossil-fuel-industry-sees-the-future-in-hard-to-recycle-plastic-123631>

*“The production of plastics draws on fossil feedstocks, with a significant carbon impact that will become even more significant with the projected surge in consumption. Over 90% of plastics produced are derived from virgin fossil feedstocks. This represents, for all plastics (not just packaging), about 6% of global oil consumption, which is equivalent to the oil consumption of the global aviation sector. If the current strong growth of plastics usage continues as expected, the plastics sector will account for 20% of total oil consumption and 15% of the global annual carbon budget by 2050 (this is the budget that must be adhered to in order to achieve the internationally accepted goal to remain below a 2°C increase in global warming). Even though plastics can bring resource efficiency gains during use, these figures show that it is crucial to address the greenhouse gas impact of plastics production and after-use treatment.”* - The New Plastics Economy: Rethinking The Future Of Plastics & Catalysing Action, Ellen MacArthur Foundation, 2017

We know we have to turn the tap off for fossil fuels and leave them in the ground (while also sequestering the excessive carbon already in the atmosphere) so the future of plastic packaging (compostable or not) has to become 100% virgin feedstock from renewable resources, along with the efficient recycling of the plastics already produced.

Compostable plastics have their advantages and disadvantages, as does any packaging material, but they become a considerably better option when they are in fact composted at their end of life. Therefore if compostable plastics are to exist in the New Zealand market we simply have to have a sustainable end-of-life option for them (soon to become law for all plastic packaging).

It is important to remember that compostable plastics are still very much in their infancy when compared to fossil fuel based plastics and further R&D is significantly hindered by the lack of a robust end-of-life option.

Many brands feel far more comfortable communicating to their customers that their packaging is recyclable knowing very well that much, or all of it will not be getting recycled, rather than communicating that it is compostable when there is no collection system to recommend.

A significant advantage for compostable plastics (and other compostable packaging) over non-compostable packaging is that it can be composted almost anywhere. With the rise and rise of urban composting and the significantly advanced capabilities of small scale composting we are now able to create distributed networks of mini commercial composting sites (i.e. hot composting) set up in urban environments in our larger cities, or singular composting sites in our smaller towns significantly reducing the need to transport it long distances. See <https://carboncyclecompost.com/> for further details.

The necessity to grow food in our cities will ensure this urban composting we also be paired with urban regenerative food growing, significantly reducing the need for packaging. (Contact us if you'd like to hear more).

Ultimately we believe a combination of centralised and decentralised composting systems will be the best outcome for New Zealand.

In contrast the non-compostable or recyclable packaging materials need to be collected on mass and transported to one facility. Viable recycling is all about scale.

The similarities in look, feel, and function between compostable and non-compostable plastics will forever cause high levels of confusion for New Zealanders, and high levels of contamination for the material recoverers. They therefore need to be easily identifiable as one or the other.

This scheme was designed around a simple colour coding methodology that we would like to see being applied across all packaging materials. It's basically replacing or enhancing the polymer numbers symbols 1-7 with colours. This would allow people to identify what packaging goes into which collection bin far more easily.

Further to this the different packaging materials could be identified through the use of machinery and technology - such as that outlined in our technology section, or perhaps a combination of both could be utilised.

There are still some knowledge gaps to fill and some questions to be answered especially around the certification of the compostable plastics but this could be solved easily if we can get the relevant stakeholders to collaborate, and the scheme could be further refined following a larger secondary trial.

The announcement by the New Zealand Food and Grocery Council that "it has recommended a "Not for Now" approach for compostable plastic packaging and products sold for use in households until the appropriate infrastructure is in place" came during our writing of this Summary Report and highlights to us the desperate need for a scheme such as what we have designed.

We understand that compostable packaging is complicated but every new material in its early life is. The very first plastics were no different.

The biggest risk from this announcement is the creation of some form of divide between those in the compostable packaging camps and those against it. The general public is massively confused about how best to dispose of packaging (compostable and recyclable) which has been exacerbated by incredibly irresponsible behaviour by some packaging manufacturers and brands misusing terms such as "biodegradable" and "degradable".

More than ever we need to come together at this time to help tidy up this packaging mess we have inherited and ensure the messages going to the public are consistent. They are desperate to do the right thing and solve our plastic pollution crisis.

This product stewardship scheme we designed and trialed, with the resources we have, is our contribution to catalyse that collaboration.

Thanks for reading. Please contact Nick with any questions, ideas or feedback.

Nick Morrison  
[nick@gowellconsulting.co.nz](mailto:nick@gowellconsulting.co.nz)  
 027-777-3391



# Thanks to our Friends

Our 6-week trial would not have been possible without the help we received from the following organisations and their staff. We are truly thankful for your support.

- Huckleberry, and all the staff at New Lynn and Glen Innes stores
- Commonsense Organics and all the staff at their Auckland store
- Trade Aid and their staff at the Ponsonby store.
- Kokako
- Bostock Chickens
- The Organic Farm Butchery
- Ceres Organics
- Proper Crisps



And to our community engagement volunteers. Thank you for your belief, your support, and your enthusiasm for this project. It was truly inspiring to have so many people willing to donate their time to try and find a solution to the plastic pollution crisis.

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 Hannah Bartley  
 Livana Lahola  
 Paige Searing  
 Emily Wilson  
 Oliver Saltmarsh  
 Sally Caines  
 Nonta Libbrecht-Carey  
 Briar Lloyd  
 Ayla Irving-lamb

# Key Team Members



## Jack Brown

Jack is the CPSS Project Lead and the conductor who keeps all the various stakeholders connected and in tune. Prior to the CPSS, Jack worked at Supertrash where he gathered an extensive knowledge of New Zealand's waste management industry, commercial composting, and compostable packaging. Jack's work at Supertrash was recognised last year when he was made a finalist of the 'Millennials on a Mission' category at the 2019 Sustainable Business Network Awards. Jack is also on the Board of The Now Crowd, a professional network for young people focused on sustainability in corporate New Zealand.



## Nick Morrison

Nick Morrison founded Go Well Consulting on the belief that New Zealand should be leading the world in sustainable living and sustainable business practices, yet businesses needed better access to expert help and guidance to navigate the transition. Prior to founding Go Well, Nick spent two and a half years working as the National Sales and Sustainability Manager at the compostable packaging business, Innocent Packaging. Nick has successfully completed studies in The Circular Economy, Sustainable Packaging, and the Sustainability Reporting - GRI Certified Training Course. Nick is the consultant behind the nationwide, plastic bag, behavioural change campaign - Bags Not



## Craig McLeod

Craig has spent nine years as a strategist in the marketing industry (Australia and New Zealand) working on a range of commercial client's projects - including Microsoft, Air New Zealand, Sanitarium, Public Transport Victoria, Australia Post, SKY Television, and Goodman Fielder. He has collaborated with range of pro-bono clients Extinction Rebellion, We Compost, and Good Nature - designing advertising campaigns that cut through the clutter and prompt positive behaviour change.

# Appendix - Comments

These are the comments we received from those we surveyed in-store.



It's inspiring that supermarkets are supporting this and creating awareness

Fantastic

This is great

It's a great idea to have the stickers which make it easy to see what can be composted

Amazing, Hope it works

It's a good scheme and I look forward to using it

Eliminating plastic is great

I love it and think its a great idea You could make it a reward scheme

Anything to encourage sustainable packaging is positive

Excellent, stick with it

Great for brands to highlight their environmental commitments

If you shop here you expect to pay a bit more anyway

Sick of not having anywhere to put compostables.

I would be keen to bring this in at my workplace - Auckland Courts You need to educate the kids so they can lead it

I never know what to do with compostable packaging

I have lots of compostable packaging at home but don't

know what to do with it

I would use it if I could drop food scraps of as well

Plastics are very confusing

I'm just not interested

I will use it

It's good if people actually bring it back, I hope they do

We don't live in the area so probably won't be back here

Some brands explain packaging well and some are false advertising. It indicates an ethical product

I like that this helps to make it clear how we can avoid landfill

Great Program

Great program

I get confused about compostable packaging but if the stickers made it easy that would be good

I find packaging easy to understand but I understand other people's confusion. I might use this if it was in my supermarket.

Some packaging is very confusing

I don't know what to do with commercial compostable packaging if I don't have my collection Brands don't make it clear what the packaging is made from or how long it will take to break down

I mostly compost at home but maybe if I had too much I

would use the system?

I think it's annoying that you have to read the small print to learn how to dispose of the packaging Commercial composting is not available in NZ

I already pay more for eco products so paying a bit more is fine

Interesting

This is great as I live in an apartment.

I used the scheme but didn't know the stickers were part of it.

I have tried packaging in my worm farm but it didn't work

being compostable shows the brand is trying to do the right thing

I would use it if there was a collection point at the supermarket

Compostable packaging doesn't give any instructions on what to do if you don't have compost bin. I wouldn't use the scheme, I would forget

Needs to be more widespread Some brands label clearly but others almost seem misleading

allows to compost without using home compost as I don't like the idea of putting packaging in my home compost because of the inks and stuff

Seems simple - I like the stickers

Awesome, good signage needs to be used to attract people

Great very interesting

This is good to get people aware of what packaging is available

Advertising - I didn't know this was happening

Sounds very convenient

Think it's a great scheme

Too complex. Extra step of having to sort the packaging at home.

Less landfill the better. Good for people to be aware of this.

Don't believe some of the compostable claims. this would provide some more certainty.

Reuse soft packaging for dog. Would forget to bring it back. Have to keep it somewhere.

Like it but just do it for everything. Always more expensive.

like - must be easy pack to bin recognizability

I might or might not use this scheme

Awesome

Sounds great

Environmentally sound

# Appendix - Comments



|  |   |  |   |
|--|---|--|---|
| I would love to see this in the larger supermarkets  | good that it will go to a place that knows what to do with it good feelings - almost like I don't use any packaging Don't have a compost at the moment so handy to have this  | understood it was truly better than landfill   | It is surely a good thing for mother earth and this beautiful country   |
| Needs to be really obvious what is part of the program   | Stickers are a good way to mark the product.  | Labelling is confusing, biodegradable and other words are misleading. I don't feel that much of what is home compostable will actually compost.                | Lack of awareness to of the scheme. Aware of the process to compost packaging but not how you can get it into the system. |
| Fantastic idea filling a gap. You just need to find an efficient way to educate people   | It's great that you are here to explain it to me  | It's so confusing to tell what is really compostable   | No prior knowledge  |
| Needs to be in more convenient locations, I don't come here enough   | Compostable packaging is still industrial packaging   | I like the idea but it must be easy  | Every little bit helps  |
| I would use it if I had a decent amount of packaging I would swap to that product if it was just as good                         | It makes environmental sense  | If I could be sure it was truly compostable I would compost it at home.  | Good initiative   |
| Packaging often says compostable but not what to do with it The collection program would have to be really easy for me to use it | It's a good idea but I compost all my packaging at home so I would not use it.  | I use the Ecostore refill hub already so I would just add this in to   | Concerned about stickers or other wrapping applied by stores that aren't compostable.                                     |
| I would just recycle it as returning it is too messy   | I don't choose compostable packaging, didn't think compostable packaging could go in the home compost so avoided it   | I would love a system like this.   | Like it   |
| I wouldn't bring meat packets back but I would bring other compostable packaging   | I wish this was more widespread and that I had known about it before now but I have not been here in 6 weeks. I buy lots of compostable products as I feel its better but I live in an apartment so it all goes in the bin. | I can compost at home so I probably would not use the system and I find that some compostable packaging has good labelling and others do not                   | Is this our only option? Will it overwhelm composters like soft plastics recycling was overwhelmed?                       |
| This doesn't really interest me  | more compostable packaging would be great   | I find compostable packaging confusing as I don't have a compost bin so I don't know what to do with it If it was at supermarkets I would use it but not here. | Good idea   |
| I compost packaging at home but it is quite slow   | I haven't been here in the last 6 weeks to see the program but its a really good idea   | Let's save the planet  | ok to pay 50c to \$1 more.  |
| I like this as I can't compost commercial packaging at home  | Awesome idea, I live in Tauranga  | If we can reduce waste to landfill that's great  | So much mislabelling, very suspicious of compostable packaging, very rarely buy pre-packaged goods.                       |
| I don't like that it would cost more   | Good idea   | I feel I'm doing something good for the earth every day in a more conscious way.   | Good on you   |
| anything we can do to help the planet is worth a try   | I have a compost bin but don't want to put the packaging in it. I would use the program if I  | I like the idea a lot in theory but don't know much about it.  | Good initiative   |