



Zero Waste New Zealand Ltd  
PO Box 33 1695 Takapuna  
Auckland New Zealand  
Telephone: 09 486 0734  
Fax: 09 489 3232  
Email: [jo@zerowaste.co.nz](mailto:jo@zerowaste.co.nz)  
[www.zerowaste.co.nz](http://www.zerowaste.co.nz)

**ZEROWASTE**  
NEW ZEALAND LTD

## Is Zero Waste Conceivable?

## What are the social, environmental and economic viabilities?

## Can we reach Zero Waste?

I believe so and here is why.

I would like to take you on a waste resource journey to a couple of Councils, businesses, big, small and corporate offices and review waste reductions and their resultant residual waste stream.

I am taking good examples; you all know the bad ones. Lets have a look at what the state of play is, and discuss this against a back drop of Zerowaste aims, carbon mitigation and the Waste Minimisation Bill, and what this means socially, economically and environmentally.

The **Opotiki District Council** was the first in the country to adopt a zero waste policy. It continues to lead the way in minimising and managing solid waste in an environmentally responsible manner. Opotiki has 160km of coastline, 9000 residents and 30,000 visitors annually. Half the residents live in and around Opotiki.

Solid waste and recyclable materials are collected from approximately 1,700 properties in the Opotiki area. Apart from in Opotiki, two other Resource Recovery Centres are also operated at Te Kaha and Waihou Bay, with a further two community-run centres at Torere and Maraenui.

Since 1999 they have consistently diverted 90% of their waste stream from landfill.

### How do they do this?

They recycle all plastics; they have removed rubbish bins in the street and from recreation areas like beaches. Rubbish bins, they have found, attract rubbish. Not just in them, just anywhere around them.

The three Resource Recovery Centres (Opotiki, Te Kaha and Waihou Bay) have a combined replacement value in excess of \$1 million. Annual operating costs are about \$950,000, funded from targeted rates and direct fees and charges. They deal with recyclables, green waste, and building materials which can be brought for sale, recycling or further use.

What is the composition of the 10% residual waste that gets to the landfill?

The 1000 tonnes of residual waste consists of

1. The 250 tonnes that is collected bagged from the residents. The bags hold only 25 litres which give little scope to get expansive with rubbish. The Council does not open or touch this material. It goes straight to the landfill. They do know that about 50 tonnes/year of this waste is putrescibles or kitchen waste. Opotiki has looked at ways of diverting

this organic waste stream, but as yet have not come up with a cost effective diversion.

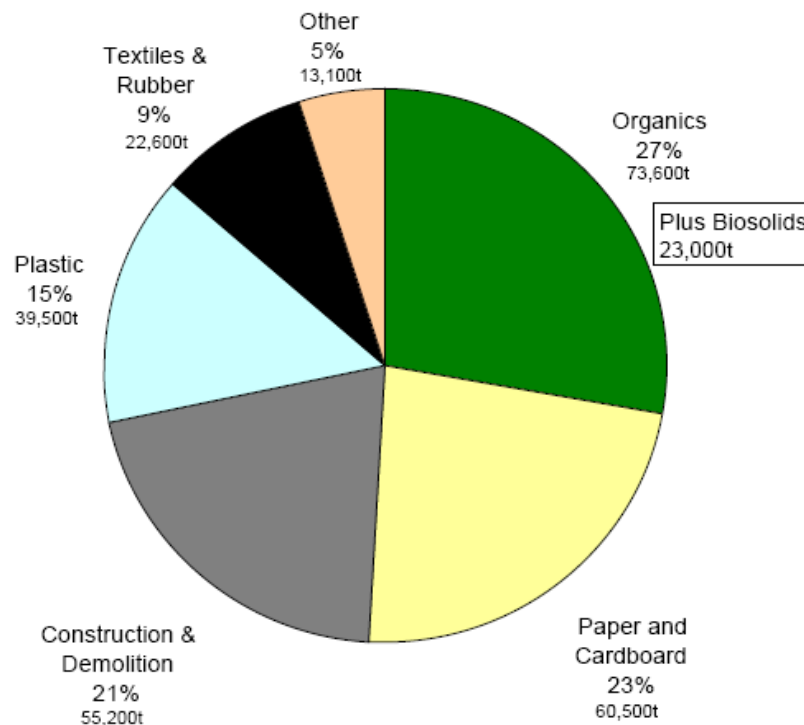
2. The remaining 759 tonnes of residual waste per year is made up of contaminated material such as oil-soaked rags, and other lines such as innerspring mattresses, butchers waste, and old clothes.

Some of this could be deconstructed and sorted. Currently the Council seem comfortable where they are. Opotiki has always made sure any scheme they started did not depend on subsidies: they embark on only what they mean to maintain. At present, the economics mean that it really is not worth putting on that additional worker.

As transport costs rise and waste levies arrive, the chance to invest some of the hypothecated funding from the bill will change the economics, environment and the social viability. A new balance, much further towards zero waste, will be found.

**Christchurch City Council** maintains an excellent commentary, laced with statistics, on their website. This pie diagram is derived from the website.

**Composition by weight of waste landfilled in 2005  
(total 263,000 tonnes)**



**ZERO WASTE NEW ZEALAND LIMITED**

---

P.O. Box 33 1695, Takapuna, Auckland, New Zealand,  
Phone: 64 9 486 0734, Fax: 64 9 489 3232  
Email: [jo@zerowaste.co.nz](mailto:jo@zerowaste.co.nz) Website: [www.zerowaste.co.nz](http://www.zerowaste.co.nz)

Christchurch is the "Garden City", so, unsurprisingly, much of the waste being disposed of in the landfill is garden waste (14%). Food scraps also make up a significant portion of the waste (13%), making organics the single biggest component in the landfill (27% or 73,000 tonnes per year). This is a good energy source waiting to be diverted.

Paper and cardboard are also major components of the waste stream (23%), despite these materials being readily recyclable. All clean and flattened cardboard and all paper (including magazines, circulars, envelopes and office paper) can be recycled at the kerbside.

The trend towards plastic packaging and products has resulted in an influx of plastic in the landfill. Plastic now makes up 15% of the waste Christchurch generates.

For outside reference, Los Angeles recycles 62% of its waste and Italy has developed some of the most cost-effective door to door (porta a porta) collection systems in the world. Communities from one end of the Italy have reached massive diversion rates in very short time periods. For example, Novara (population 100,000) near Turin has reached 70% diversion in 18 months.

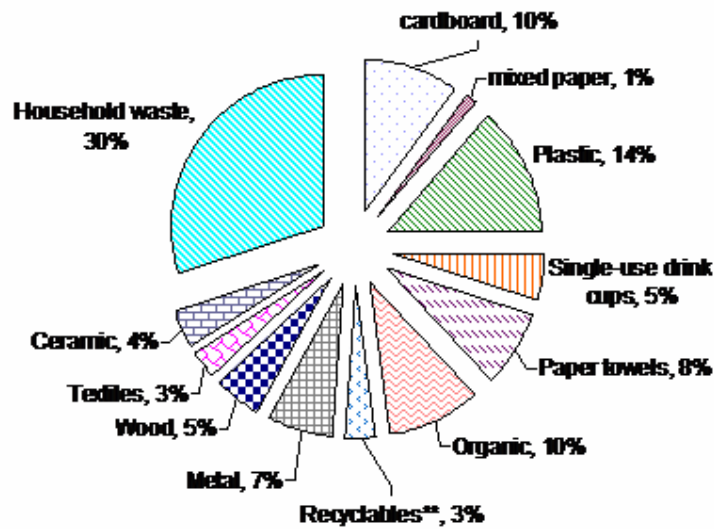
As for big business, **Fonterra** now diverts over 75% of its waste nationwide. Of their 25% residual waste, much of it is dirty contaminated packaging. The technique, now, is to look at the processes that cause that contamination and see if they can be changed to make further savings. A recent positive achievement has been removing dirty plastic from their waste stream. Although this is not Fonterra's brief-Farm-based biogas production would be a great investment for those farmers earning well this year and wishing to offset some costs, carbon and damage being done to the land.

A work in progress is **Counties Power**, a lines company and distributor of electricity in the South Auckland area. A waste audit of their day to day waste showed that the vast majority of the material could be diverted from landfill. In fact, the majority of waste in the seven large dumpsters sent to landfill each week is domestic waste generously bought to work and donated by workers at the company. In general, a "1960s" attitude to waste prevails, and is hard to counter from outside without comprehensive internal support. After some capital expenditure a saving of around \$50,000 per annum in waste disposal and water savings is possible. This is an example, when even if the economics stack up, the social changes are hard to make unless there is a real and determined leadership.

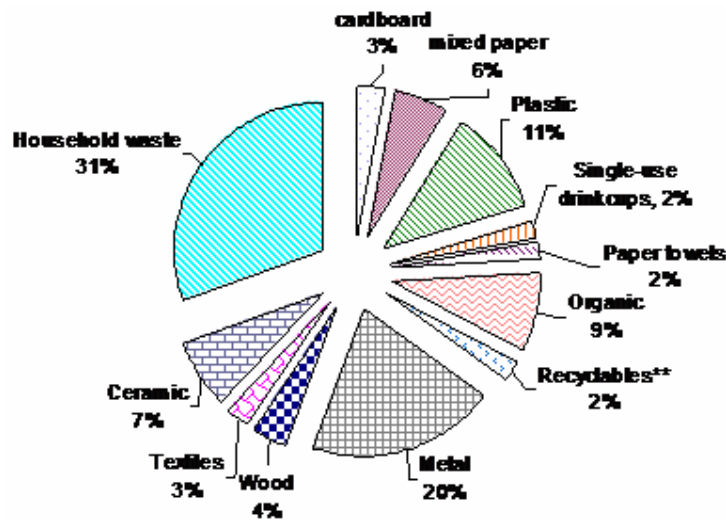
#### ZERO WASTE NEW ZEALAND LIMITED

---

P.O. Box 33 1695, Takapuna, Auckland, New Zealand,  
Phone: 64 9 486 0734, Fax: 64 9 489 3232  
Email: [jo@zerowaste.co.nz](mailto:jo@zerowaste.co.nz) Website: [www.zerowaste.co.nz](http://www.zerowaste.co.nz)



Volume distribution from total of 7 bins



Weight distribution from total of 7 bins

**Oil Seed Extractions Limited** of Ashburton have not considered traditional waste lines as waste, they have automatically reused them. So, it is as much a question with them as where you draw the line. Waste is truly a resource. This small company produces a product range comprising of an extensive list of oils and oilseed products, with a focus on bulk nutritional oils. A wide range of specialty oils is grown on the Canterbury Plains and produced from their purpose-built premises in Ashburton.

In addition, they produce oil powders, flour, specialty concentrates, seed extracts, fibre and associated functional food ingredients.

**ZERO WASTE NEW ZEALAND LIMITED**

P.O. Box 33 1695, Takapuna, Auckland, New Zealand,  
 Phone: 64 9 486 0734, Fax: 64 9 489 3232  
 Email: [jo@zerowaste.co.nz](mailto:jo@zerowaste.co.nz) Website: [www.zerowaste.co.nz](http://www.zerowaste.co.nz)

Waste oil has been put to good use as biofuel for their fleet and now also their parent company's fleet of vehicles. The seed cake which is the dried material that has had the oil removed is used as stock feed, and, more recently, a market has been found for it as a very successful fish burley.

Panatons containing food grade oil are now made from a plastic liner held in a cardboard frame. The liner is recycled and cardboard reused until it is damaged in some way and has to be recycled as well.

The **Vero Tower** in Auckland has 42 stories, most of them offices. Many of the companies use a secure paper recycler. Apart from this there are facilities for a non-secure paper recycling, recyclables and cardboard recycling provided in the loading dock. However, the residual stream going into the compacter still contains 60-80% paper and a considerable quantity of recyclables. Some tenants are not recycling well, but there is also a considerable disconnect between the tenants' recycling and the treatment of any separated lines by the cleaning contractors. A program is currently underway to up-skill and upgrade performances in all areas, particularly to improve the connections between tenants and the various cleaning contractors in the building.

The reality is, that the residual rubbish is not made up of lines difficult to divert. The difficulty is initiating and sustaining a cohesive community recycling behaviour.

The screening of Al Gore's film, *An Inconvenient Truth*, and the press on climate events in New Zealand and worldwide, has caused a ground swell in the general attitude and opinion of New Zealanders. More concern, more action and a maturing of opinion are all clearly evident and have made change at the Vero building easier than it might have been even a year ago.

It is easy to say that each individual doesn't create much waste (and therefore contribute to global warming)- but the corollary to this is- *who else is there?* The answer is "Your neighbour." who maybe is saying exactly the same thing. The bottom line is, limiting the long-term effect of global warming comes down to individual responsibility and success will come from the cumulative effect of many individuals' actions. It doesn't really matter if you are paid \$400 dollars an hour or \$40 or \$14, each person carries that responsibility. Because once the recycling is mixed with residual waste in the old style waste paper bin it gets contaminated with food and old coffee. Responsibility at source is essential for Zero Waste.

The strategic positioning of high profile firms located in tower blocks, such as the Vero Centre, in this period of significant change is an interesting debate. How can such a firm achieve a respected, defensible position and avoid the green wash?

#### ZERO WASTE NEW ZEALAND LIMITED

---

P.O. Box 33 1695, Takapuna, Auckland, New Zealand,  
Phone: 64 9 486 0734, Fax: 64 9 489 3232  
Email: [jo@zerowaste.co.nz](mailto:jo@zerowaste.co.nz) Website: [www.zerowaste.co.nz](http://www.zerowaste.co.nz)

**For these firms there are two considerations:**

1. Unless leading firms move to take a stand they are going to be left behind. Whatever the background reasoning, the whole commercial sector is on the move, slowly but surely into the deeper green. Those companies who do not keep a green watch going are going to show up as change-averse dinosaurs, just like those firms who ask you to alert them to an email by phone, or those that might have kept the old compressed air delivery of change and dockets.
2. At some point, clients are going to start investigating the stance of the firm on environmental issues. Even if the firms don't wish play the environmental awareness card in their corporate image; to be able to wheel it out when policies change, or when challenged, would be satisfying and ameliorate that risk. The public are increasingly seeking ethical, clean green options; witness the recent search for ethical, green kiwi saver providers. So, a carefully considered public show of actual achievements should be on the agenda.

**Will the seat on the green bandwagon sit comfortably?** Yes. What we are really advocating is viewing waste as a resource with a monetary value. Both waste collection and recycling cost money. With the Waste Minimisation Bill on the horizon, realization that the scales are tipping economically in favour of recycling is widespread. However, in most firms this is not the driver; it is the environmental concerns of their employees and customers that are pushing change.

It is a change in orientation and a change in habits. It is the same sort of social change as putting on a seat belt in a car or smoking outside. Once the change is made it becomes the norm and is rapidly incorporated within the unconscious everyday acts.

**What are the materials commonly left behind in residual waste?**

The recidivist waste stream has four categories:

1. Recyclables, the stuff we haven't bothered to divert. This may, depending on what it is discarded with it, become contaminated.
2. Waste produced, not so much as an end product, but by the process. Examples are: the- Fonterra-food on packaging; the economics of unsorted waste in Opotiki; the economics of processing the organics at Opotiki; food spills, oil spills , contaminated material etc
3. Products which are composites, fused combinations of materials, which are difficult and or expensive to deconstruct e.g. televisions, computers, small consumer electronics and PVC
4. Those lines which require recognized secondary industries, which we do not have available in New Zealand yet, to reuse the resources.

**ZERO WASTE NEW ZEALAND LIMITED**

---

P.O. Box 33 1695, Takapuna, Auckland, New Zealand,  
Phone: 64 9 486 0734, Fax: 64 9 489 3232  
Email: [jo@zerowaste.co.nz](mailto:jo@zerowaste.co.nz) Website: [www.zerowaste.co.nz](http://www.zerowaste.co.nz)

## How could we deal with these categories?

1. Recycling; changing the economics and the social expectations so this becomes an imperative. The Waste Minimisation Bill and climate change have a part to play here. The Packaging Accord has started but NZ has to move much faster and harder, we have to gain cooperation from each and every individual and set the target high. We should have no more new non-recyclable containers appearing on supermarket shelves. Container Deposit Legislation or CDL has been a contentious issue but it does get the recycling results. Excellent waste management has a significant role to play in mitigating atmospheric carbon dioxide accumulation and also as a vehicle to gain the positive and active cooperation of the population.
2. Design and manufacture to eliminate as far as possible those wastes made non-recyclable by contamination. This signals the end of the disposable society unless the product can be easily recycled.
3. Products which are composites, a fused combination of materials, which are difficult to deconstruct eg TVs , computers, are the most difficult category. The solution is either a move to alternate materials or plan for deconstruction and reuse at the time of manufacture. Our parents bought furniture for a lifetime but consumerism has almost made it a disposable item. An informal survey of a recent inorganic collection on Auckland's North Shore showed there was foam-bearing furniture in 25% of the kerbside offerings. A trial by Zero Waste has shown that furniture can be deconstructed and the vast majority of the components utilized in some way. Foam sold for 70c a kilo, the furniture frame timber is non-tanalised, and can be used as firewood; and the metal goes into recycling. In terms of residual waste volume into landfill that is good result.

The planned Extended Producer Responsibility (EPR) will take marginally economical or uneconomical materials for recovery and tip them into a line that can be recycled. This is important, for example, for environmentally toxic e-waste.

Socially, the answer will only come with a moderation and maturity in consumerism.

4. Using secondary industries to divert material from landfill is going to become more important. The Waste Minimisation Bill will stimulate the creation of new business or industry from waste streams which some still consider worthless waste. Waste plastic and waste foods are going, I believe, to be two of the first cabs off the rank with industries in biogas and waste plastic-to-diesel. These industries need capital input,

### ZERO WASTE NEW ZEALAND LIMITED

---

P.O. Box 33 1695, Takapuna, Auckland, New Zealand,  
Phone: 64 9 486 0734, Fax: 64 9 489 3232  
Email: [jo@zerowaste.co.nz](mailto:jo@zerowaste.co.nz) Website: [www.zerowaste.co.nz](http://www.zerowaste.co.nz)

national planning and leadership, and a determination to keep them going. Some of this leadership and assistance must come from the Waste Minimisation Authority.

Finally, some things require a systemic change, as well as an individual's action, to get an overall result. I would put into this group the banning of waste disposal units, plastic windows in envelopes, unrecyclable meat trays in supermarkets and initiation of food collection in CBDs. These are actions that need to be controlled by bylaws and legislation. In the same way, use of a percentage of recycled or reprocessed material in each new development and in products such as newsprint is important. Viable end markets for quality goods made from reprocessed material are vital, in the context of the world's mineral resources essential.

The future is an extension of today. Can we get to Zero Waste? Put the above policies in place, along with some social imperative, and we will be damn close.

Major vehicles of Zero Waste can be said to be prevention, and visibility, innovation, encouragement, and industrial transformation. Zero Waste is an aspirational goal if you like. But there is a measurement: Zero, zip, zilch nahdah!

Jo Knight  
Director  
Zero Waste New Zealand Limited

---

**ZERO WASTE NEW ZEALAND LIMITED**

P.O. Box 33 1695, Takapuna, Auckland, New Zealand,  
Phone: 64 9 486 0734, Fax: 64 9 489 3232  
Email: [jo@zerowaste.co.nz](mailto:jo@zerowaste.co.nz) Website: [www.zerowaste.co.nz](http://www.zerowaste.co.nz)