

The Elderly Care Composting Pilot Project

Case Study Report

September 2014

In Partnership With:

Take Care NZ

Kapiti Coast District Council

Waikanae Country Lodge

Friendlypak

Te Rito Organics

Low Impact (The Hungry Bin)

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EXECUTIVE SUMMARY

The core purpose of the Elderly Care Composting pilot project was to successfully implement an on-site composting system at a Kapiti Retirement Village.

The project has resulted in positive sustainability practices being adopted at The Waikanae Country Lodge, together with many environmental, social and financial benefits.

The implementation of an easy to use indoor and outdoor composting system resulted in an 84% reduction of organic waste volumes being sent to landfill.

Simple and inspirational educational methods acted as a catalyst for change in sustainability practices at The Lodge. This behavioural shift will be carried into households throughout the region through family and friends of the staff involved in the project.

The Lodge has benefitted financially, by saving thousands of dollars in waste disposal costs per year.

The one on one guided support and monitoring process has ensured that long term waste minimisation practices by the retirement village will endure.

The Elderly Care Composting Project is a success story of how council, business and compostable companions can work together to make a real difference to improving the health of our planet.



BACKGROUND

In 2013 Take Care Business Services Ltd (Take Care) was awarded funding from Kapiti Coast District Council (KCDC) from the Waste Levy Fund **for Community Projects and for New Technologies and Seed Funding**.

Take Care received financial support from KCDC of \$2,475 + \$1,525.



The funding was used to trial a project with an aim to:

- ~ implement an on-site organic waste recycling system at a Waikanae retirement village; and
- ~ support a business model that offers professional consultancy and product services to the elderly care industry, promoting and implementing organic waste recycling practices at rest homes and retirement villages throughout the Kapiti District.

Leanne Myers of Take Care was the project co-ordinator and education consultant.

Simon Calcinaï of Kapiti Coast District Council was the supporting waste minimisation officer.

PROJECT OVERVIEW

The project began in January 2014 and took place at Waikanae Country Lodge, 394 Te Moana Rd, Waikanae, Kapiti Coast.

The Lodge have 72 employees and cater for up to 50 residents.



The project phases included:

1. **Initial Consultation** - Meeting with key personnel to establish relationships and discuss project details.
2. **Indoor Bin Collection System** - The installation of an internal collection bin system, including educational posters.
3. **Outdoor Composting System** - The installation of an on-site, outdoor composting system.
4. **Staff Education** - Educational talks with all staff about the new processes and the importance of organic waste recycling.
5. **Monitoring and Support** - Weekly monitoring and support for the designated staff eco-rangers during the behavioural change period.
6. **Two Waste Audits** - Pre and post composting implementation waste audits.
7. **Reporting** – Case Study report including Environmental, Social and Financial benefits, and a waste audit analysis report. The reporting phase also included a results and awards ceremony for staff.

The Elderly Care Composting pilot project was completed in September 2014.

PROJECT DETAILS

Consultation

Meetings and discussions were held with staff at Waikanae Country Lodge whose roles would be affected by the project. The initial consultation was key to understanding current work schedules and personal needs in regards to the implementation of a composting system.

This period gave staff the time to be informed of and prepared for the coming changes.

The people involved in the consultation phase were the:

- Gardener
- Building facilities manager
- Cleaners
- Kitchen staff
- Operations manager
- Other interested staff members



Indoor Bin Collection System

The installation of the internal bin system was carried out in three stages:

1. An initial meeting with the gardener and building facilities manager to propose the bin and bag options available to collect the organic waste.
2. A detailed site tour to determine the number and type of bins required and the suitable locations for each one.
3. The installation of the new waste to landfill, tissues and food scraps bins and educational posters, to support staff with their internal sorting process.

Equipment Required	For	Waste Stream
2x 10L Tall Air Bins 2x 8L Maxi Air Bins 1x 35L R2D2 Industrial Bin Bio Bags (6 months supply)	Staff Room, Elderly Care Kitchenettes, Main Kitchen	Food Scraps
10x 15L Bins	Toilets, Bathrooms & Kitchenettes	Tissues

Note:

1. It was identified during the pilot project that purchasing tissues bins of a different colour to the waste to landfill bins would have been more beneficial.
2. It was decided not to trial organic waste recycling in the resident rooms and hospital bedrooms, as the volume of organic waste found in these rooms was negligible.

About Friendlypak

The indoor bins were provided by Friendlypak - A New Zealand owned company that offers a range of composting products and compostable packaging. <http://www.friendlypak.co.nz/>



Commercial Kitchen 35L Bin



Maxi Air 8L Bin



Tall Air 10L Bin

Outdoor Composting System

The installation of the outdoor composting system was carried out in two parts:

1. An initial meeting with the gardener to propose suitable compost bin options and to confirm an outside location for processing the organic waste.
2. The delivery and installation of the external composting bin system.

Equipment Purchased	Waste Stream
3x Hungry Bin Worm Farms	Food Scraps
4x Te Rito Compost Bins	Food Scraps, Tissues and Green Waste

Note:

In order to have a more detailed understanding of the volumes and type of organic waste being processed on-site, it was identified during the pilot project that it would be better to confirm the equipment required after the first waste audit is conducted.

About The Hungry Bin

The hungry bin is a fast and convenient way to compost food scraps. The innovative design is highly efficient and can process up to 2.0 kilos of waste per day. No turning, no lifting, and no rodents! The worms do all the work.

Designed and made in New Zealand by Low Impact Ltd. <http://www.hungrybin.co.nz/>

About The Te Rito Outdoor Compost Bin

These bins are designed to hot compost all green waste, food scraps and tissues. The NZ designed and manufactured bin uses removable wooden slats to make turning easy and ample aeration allows nature do it's thing. The wood is untreated pine which will last around 10 years.

The Te Rito Compost bins are a joint venture partnership between two Porirua non-profit organisations committed to helping our community and protecting our environment - Mana Recovery and Te Rito Organics. <http://asertnz.wordpress.com>



3x Hungry Bins



4x Te Rito Compost Bins

Staff Education

The education process was comprised of three key aspects:

1. An initial educational talk at the staff meeting about the new process and the importance of recycling.
2. Posters placed around the premises explaining why we need to recycle organic waste; and posters placed next to the internal collection bins to explain what goes in the bins.
3. The assignment of internal eco rangers to assist staff with any questions and support required throughout this key behavioural change period.



Kitchen Bin System



Why Education



Simple Poster Designs

Note:

The original bin poster designs were too busy for staff to understand. In consultation with the eco rangers the posters were redesigned to remove the pictures and replace with large, simple wording.

Monitoring and Support

This was an important stage in the composting implementation process that included:

- A staff feedback and resolution form to let all staff know that their feedback was welcome. This supported the eco rangers to follow a process to work any issues through to a place of resolution.
- Regular liaison between the internal eco rangers and project manager Leanne Myers.

An example of the monitoring and support outcomes is shown below:

Issue	Resolution	Outcome
Contamination of gloves in the morning bin inspections.	<ol style="list-style-type: none"> 1. Set up additional meeting with night cleaners who didn't attend initial education talk. 2. Regular composting education slot approved for staff meetings. 	Contamination in bins minimal.
One of the Hungry Bins turned anaerobic.	<ol style="list-style-type: none"> 1. Reduce the volume of food scraps going into the bin until the worms have had time to establish a working system. 2. Add more worms. 3. Separate out the sloppy food waste and put in the Te Rito Compost Bin. 	Worm bin returned to an aerobic composting process.
Approximately 5 bags of tissue waste a month is surplus to the input volume required for the Te Rito Compost Bin process.	<ol style="list-style-type: none"> 1. Organise a back up organic waste collection for a monthly surplus tissues service. 2. Shred the tissue paper with the lawn mower / leaf blower. 3. Purchase another Te Rito Compost Bin. 	<p>No tissue composting collection service available.</p> <p>Tissue volumes to be reduced by shredding.</p> <p>Decision to purchase another bin pending.</p>
Gardener going on leave for six weeks.	<ol style="list-style-type: none"> 1. Arrange for temporary staff to take over the key processes. 	Composting system continued without any issues reported.

Note:

1. The regular turning of the Te Rito Compost bins and the secure system of The Hungry bin resulted in no evidence of rodents being found throughout the trial period.
2. Over a period of between one to two months, the monitoring issues reported were reduced to nil.



WASTE AUDIT RESULTS

The first waste audit was conducted on Thursday 23rd January 2014 - prior to the equipment setup and staff education processes.

The second waste audit was conducted on Thursday 29th May 2014 - after the internal and external composting system had been implemented and a two month monitoring and support phase had been carried out.

Rubbish bags that were normally placed in the waste to landfill skip and wheelie bins were collected over a period of two days.

The contents of the rubbish bags were sorted into seven categories:

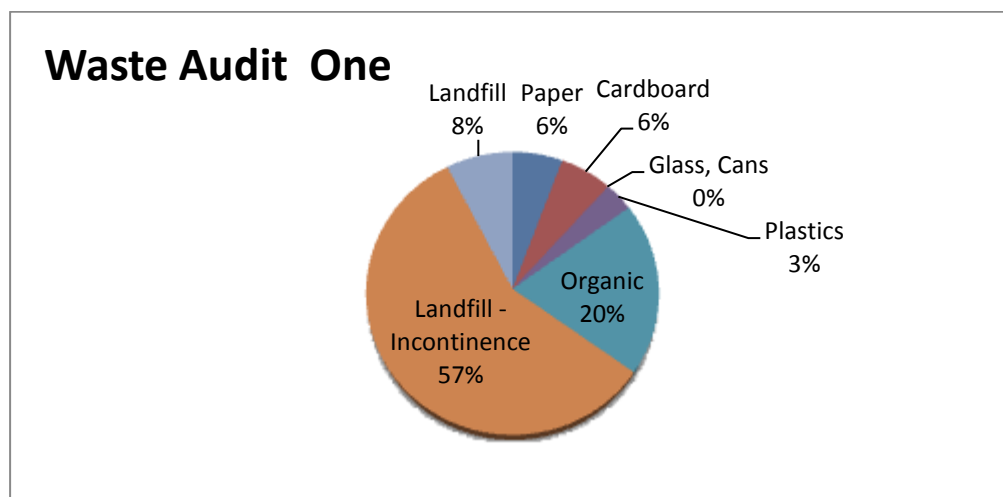
1. Organic
2. Paper
3. Glass
4. Plastics
5. Cans
6. Landfill - Incontinence Waste
7. Landfill - General



Waste Audit One

The volume and ratio of each waste stream recorded in the first waste audit are as follows:

Waste Type	% Ratio	Waste Total KG Per Day	Waste Total KG Per 2 days
Paper	6%	5.25	10.50
Cardboard	6%	5.50	11.00
Glass, Cans	0%	0.00	0.01
Plastics	3%	3.10	6.20
Organic	20%	18.25	36.50
Landfill - Incontinence	58%	53.00	106.00
Landfill	8%	7.00	14.00
Total KG's	100%	92.10	184.21



Waste Audit One Observations



Disposable plastic gloves accounted for 5Kg of the waste - extrapolated to approximately 900kg of gloves per year.



All cardboard was going to the landfill



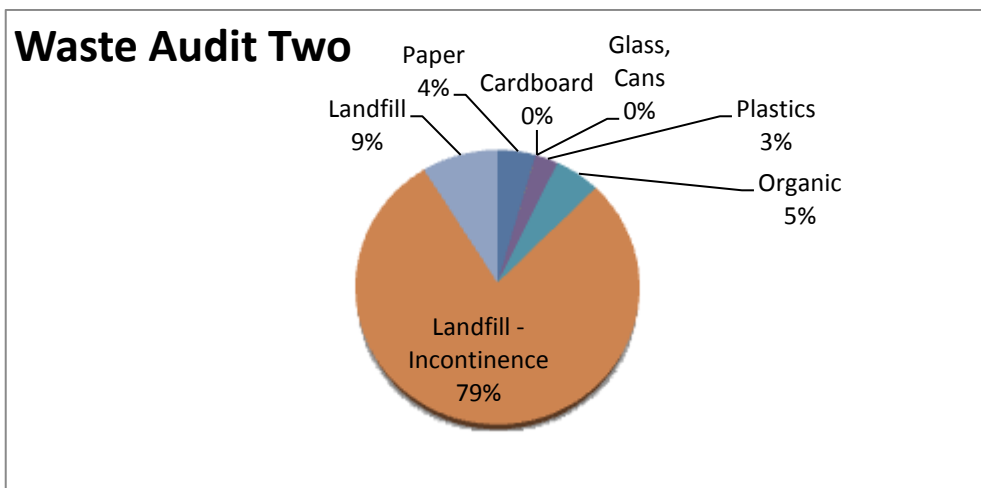
132 disposable polystyrene cups (1kg) were found in the two day waste audit – extrapolated to over 180kg per year.



Waste Audit Two

The volume and ratio of each waste stream recorded in the second waste audit are as follows:

Waste Type	% Ratio	Waste Total KG Per Day	Waste Total KG Per 2 days
Paper	4%	2.50	5.00
Cardboard	0%	0.00	0.00
Glass, Cans	0%	0.01	0.01
Plastics	3%	1.50	3.00
Organic	5%	3.00	6.00
Landfill - Incontinence	79%	44.00	88.00
Landfill	9%	5.00	10.00
Total KG's	100%	56.01	112.01



Waste Audit Two Observations



All cardboard was being recycled and the glass and cans volumes were negligible. The number of general waste to landfill bags reduced from 18 to 10.

WASTE AUDIT ANALYSIS

Table 1.

Daily volume decrease from Waste Audit One to Waste Audit Two.

Waste Type	Audit One Volume (KG)	Audit Two Volume (KG)	Volume Decrease (KG)	Percentage Decrease
Paper	5.25	2.5	2.75	52%
Cardboard	5.50	0.0	5.50	100%
Glass, Cans	0.01	0.0	0.00	0%
Plastics	3.10	1.5	1.60	52%
Organic	18.25	3.0	15.25	84%
Landfill - Incontinence	53.00	44.0	9.00	17%
Landfill	7.00	5.0	2.00	29%
Totals	92.11	56.0	36.10	39%

Table 2.

Daily volume decrease of organic waste volume being sent to landfill.

Organic Waste Volume Decrease	
Audit One (KG)	18.25
Audit Two (KG)	3.0
Daily Decrease (KG)	15.25
Volume Decrease (%)	84%

Table 3.

Diversion of organic waste from landfill volume, per year.

Organic Waste Volume Diversion	
Per Day (KG)	15.25
Per Year (KG)	5,566

Note:

1. The volume of sloppy food waste that is put down the waste disposal unit was not included in the waste audits.
2. Only 0.5kg, or 16% of the organic waste found in the second waste audit was food scraps.
3. The organic waste left in the waste stream from the second waste audit was identified as the organic waste from the hospital rooms residents' rooms. These areas were not included in the pilot project.

ENVIRONMENTAL BENEFITS

Through the Elderly Care Composting Project, Waikanae Country Lodge:

- 🌱 **Reduced their organic waste volumes by 84%.**
- 🌱 **Saved 8 tonnes of waste per year being sent to landfill.**
- 🌱 **Decreased cardboard landfill volumes by 100%.**
- 🌱 **Decreased paper & plastic landfill volumes by 52%.**
- 🌱 **Further reduced their carbon footprint with a decrease in truck waste collection frequency.**

Note:

These figures are approximate. Some data has been extrapolated from the waste audit daily volume decrease (table 1) and multiplied by 365 days.



"You made us all happy" David Hitchins, General Manager

SOCIAL BENEFITS

Boosting staff morale and making people feel good was a key highlight of The Elderly Care Composting pilot project.

A staff awards ceremony was held on the 22nd September to revisit the importance of caring for our country's natural resources and to celebrate the team effort that produced great environmental change.

A staff survey was also conducted.

Presentation of Organic Gifts & Certificates

Lori Tice (Eco Ranger), Graham Lewis (Eco Gardener) and Steve Rankin (Building Facilities Manager), were awarded prizes and certificates for *Playing Key Roles and Being instrumental in the Success of the Project*.

David Hitchin, General Manager of Waikanae Country Lodge accepted the overall award for *Saying Yes to Positive Environmental Change*.



The cleaners and other staff members were also presented with a gift basket to share.

Staff Survey Results

- 100% of staff surveyed found the systems implemented easy to follow.
- 56% of staff surveyed would (more likely) try composting at home as a result of being involved in the composting project.
- 36% of staff were already composting at home.
- 56% of staff would consider leaving their job if the company they worked for harmed the environment.

Other behavioural changes that happened during the project were:

- The decision to reuse the cardboard for weed suppression, to further support Waikanae Country Lodge's organic friendly gardening practices.
- After the first waste audit revealed the large number of polystyrene cups being used, the company switched to recyclable plastic cups and placed a daily cap on the number of cups being placed the water machines.

FINANCIAL BENEFITS

The Elderly Care Composting Project has resulted in a net annual saving of \$2,488 for The Waikanae Country Lodge. This was through reducing their weekly bin empties by one collection a week.

The Lodge are currently looking at reducing the number of weekly empties by two a week. If this occurs, the company would save approximately \$5,404 per annum in waste disposal costs.

Table 4.

Net financial saving per year.

Organic Waste Recycling Financial Benefit Per Year	
Current cost per bin empty for Waikanae Country Lodge	\$ 56
Monthly Saving from reducing collections by one per week	\$ 243
Per Year Gross Saving by decreasing one empty per week	\$ 2,917
Less:	
Ongoing Bio Bag Purchases Per Month	\$ 36
Ongoing Bio Bag Purchases Per Year	\$ 428
Net Financial Saving Per Year for Waikanae Country Lodge	\$ 2,488

Table 5.

Ongoing Friendlypak Bio Bag purchases required per month.

Friendlypak Bio Bags	# of Bins	Avg Wkly Use	Cost Per Bag	Cost Per Wk	Cost Per Mth
10L Bags	2	5	\$ 0.18	\$ 1.80	\$ 7.8
8L Bags	2	5	\$ 0.15	\$ 1.50	\$ 6.5
35L Bags	1	10	\$ 0.50	\$ 4.95	\$ 21.4
				Total	\$ 35.7

Note:

1. Waikanae Country Lodge also saved at least one trailer load of compost delivery per year.
2. Fertiliser costs will also reduce due to having a large supply of organic compost available on-site.
3. The additional staff time required per week to conduct the internal collection and external composting processes was calculated at approximately 3 hours per week. These hours were absorbed within the existing work schedules of the key personnel.

BUSINESS MODEL OUTCOMES

The Elderly Care Composting Project has produced a great number of economic, social and financial benefits. This has proven that a consultancy business dedicated to supporting places of elderly care to compost is viable.

The project has shown that the initial investment required by these businesses to implement on-site composting systems, could be paid back within one year.

The marketing advantage of having a good environmental story to tell customers, can also be factored in to the decision making process.

Through the support of Kapiti Coast District Council and an enterprise grant from Ministry of Social Development, Leanne Myers has now established a new business called Organic Wealth.

About Organic Wealth

Creating a Nutrient Rich Nation.

Organic Wealth is an Unlimited Liability Company that provides consultancy and solutions for our people and planet to thrive. We are a consultancy group that empowers businesses to successfully recycle their organic waste.

We make it easy.

- We have proven methodology and systems to guide businesses through to composting success.
- We have selected the best range of composting products to suit different budget and environmental requirements.
- Our education workshops inspire behavioural change.
- Our monitoring process supports staff to unite around a good cause.
- Our consultancy packages are flexible and designed to meet the individual needs of our client.

Organic Wealth is with you all the way.

Through our support businesses can:

- ✓ Impress industry peers with their reduced waste to landfill costs.
- ✓ Increase company morale and help staff feel good by involving them in positive environmental change.
- ✓ Increase consumer loyalty and support for their business through caring for our planet.
- ✓ Gain public recognition and win environmental awards for their good work.

THANK YOU

I would like to thank all those who have supported this project.

*The Wealth of Our Nation lies in our soil foundation.
Composting is creating a legacy of health for our planet and people to flourish.*

*We are One Eco System - Earth, Sky, People, Plant, Animal, and Sun.
Working together as one we can restore Nature's Beauty.*

Leanne Myers

Kapiti Coast District Council

The Waikanae Country Lodge

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