ZEROWASTE

Northern North Island Zero Waste Bus Tour May 2005

BioDigester at Orini Downs

Ministry for the Environment
Manatū Mō Te Taiao

Sustainable Management Fund

Contents

1.0 Introduction

The Northern North Island Zero Waste Bus Tour was the third of three Zero Waste Bus Tours of New Zealand held by the Zero Waste New Zealand Trust in 2005. These followed on from the success of the first Zero Waste Bus Tour in the South Island in March 2004. The tours are part-sponsored by the Ministry for the Environment. Up to 23 participants joined the bus tour during the trip. On this trip it was decided to offer one-day bus tours, particularly on the 1st day of the tour. 9 people took up the offer of a one-day tour. Most of the rest of the people did the whole tour, although a couple of participants were only available for two days.

The tour involved a full day's itinerary for each of the four days with visits to community and council operated resource recovery centres and transfer stations, re-use shops, green waste composting sites, worm farms, secondary industries and landfills during the four days of the tour. On two evenings, the bus tour group met local council and community representatives at dinner and for presentations on local zero waste issues. Considerable discussion took place on waste issues, both during the day and at the evening meetings.

Responses to the post-tour questionnaires indicated that all participants had gained knowledge, ideas and inspiration for zero waste initiatives in their communities from the trip.

2.0 Background

The Zero Waste Bus Tours are intended to educate community leaders and council officers about the various options for waste minimisation and show them first hand, the variety of ways other communities have met the challenge of moving towards zero waste. The tour looks at a range of waste initiatives and the ways that they could be applied in similar communities in New Zealand.

Since the Zero Waste Council pilot project was launched in 1991, 67% of local authorities have adopted Zero Waste policies. In this time, some excellent waste minimisation and recycling initiatives have been launched; both council and community led, and these have generated impressive waste reduction figures, created jobs, and contributed towards local economies.

The Zero Waste Trust, with support from the Ministry for Environment and Simms Metals, undertook the four-day bus tours visiting projects throughout areas of both high and low population densities. The tours demonstrate that no matter how low the rating base or dispersed the population, there are examples of successful resource recovery and waste minimisation operations that can be applied to most communities.

It was possible for councillors to join or leave the tour at various stages and a number of councillors took advantage of this flexibility. Those who stayed for the full tour were able to get the most out of it.

3.0 Map and Route

Map of Northern North Island Zero Waste Bus Tour May 9 to 12 2005

The bus tour route began in Auckland, and travelled west to Waitakere then south to Manuaku, Tuakau and Hamilton overnight. Sites were visited in Hamilton then continued east to Cambridge, Matamata and south east to Rotorua for the night. Visits to sites in Rotorua, west to Tokoroa, east to Kawerau and Opotiki for the night. From Opotoki travelled north west to Tauranga and returned to Auckland via SH27.

4.0 List of Sites Visited

The Northern North Island Zero Waste Bus Tour included visits to the following sites;

- North Shore City Council for a presentation on joint collections, waste levies etc
- Waitakere City Council Refuse and Recycling Transfer Station and VCU
- Manukau Institue of Technology, School of Horticulture (vermiculture unit)
- Envirofert, waste disposal at Tuakau
- Fonterra Te Rapa and business efficiency programmes
- Materials Processing Ltd (C & D processing site) in Hamilton

- Hamilton Transfer Station including reuse, recovery and repair
- Orini Downs Biodigestor on dairy farm near Hamilton
- Cambridge Resource Recovery Centre and Plastic Lumbar plant
- Matamata Transfer Station and Vertical Compost Unit (VCU)
- In-Town Recycling Centre at Rotorua
- Roturua District Council Landfill including greenwaste and concrete recycling
- CHH – Materials Processing Ltd – Industrial recycling at Tokoroa
- Kawerau District Council Landfill and kerbside collections
- Ohiwa Holiday Park - award winning holiday destination
- Opotiki Resource Recovery Centre
- Te Maunga Transfer Station, RRP and Solvent Recovery Centre
- EERST Discussion; education in schools and vermiculture
- Maleme St Transfer Station at Tauranga

5.0 List of Bus Tour Participants

Wendy Gaisford	Environmental Planner, Environment Bay of Plenty
Bruce Hows	Technical Oficer – Refuse, Far North district Council
Andrew Iles	Councillor, Whakatane District Council
Tim Johnson	Councillor, Matamata Piako District Council
Betsy Kettle	Zero Waste Education, Rodney District
Billy McKee	Secretary, Horowhenua DC Zero Waste Focus Group
John Morris	Councillor, Waikato District Council
John Ross	Councillor, Rodney District Council
Graeme Tait	Councillor, Waikato District Council
Herman van Rooijen	Councillor, South Waikato District Council
Jo Knight	CEO, Zero Waste New Zealand Trust
Don Riesterer	Chairman Board of Trustees, Zero Waste New Zealand Trust
Lisa de Haan	Consultant, Materials Processing Lid
Lynn Green	Administration, Zero Waste New Zealand Trust

One Dayers:

Monika Bak	FullCircle Carter Holt Harvey
Yellena Boyovich	Zero Waste Co-ordinator, Kawerau District Council
Guy MacIndoe	Sustainable New Zealand
Gary Marson	Awhitu Peninsula Landcare
Jonathan Pike	Resource Recovery, Waste Management Ltd
Mike Safey	Engineer, Waikato District Council
ML Soong	Awhitu Peninsula Landcare
Nadine Wakim	Maunsell Engineering
Prue Younger	Consultant, Gisborne District Council

6.0 List of people visited and met during the tour

Bradley Nolan	North Shore City Council
Louise de Varga	North Shore City Council
Dick Fong	Waitakere City Council
Tony Gibbs	Perrys Environmental, Waitakere City
Colin McPike	Natural Waste Solutions
Jeff Wilson	Manukau Institute of Technology, School of Horticulture
Ann Candy	Deputy Mayor, Manukau City
Paul Huggins	Spotless Catering
Gary McGuire	Envirofert, Tuakau

Paddy Shannon	Envirofert, Tuakau
Spring Humphries	Fonterra Te Rapa
Lisa de Haan	Materials Processing Ltd
Sven Hanne	Hamilton Transfer Station
Roy Harlow	Integrated Systems Engineers Ltd
Miljenko Pavlinci	Matamata Transfer Station
Roselyn Sievers	Rotorua District Council
Peter Fredricsen	Materials Processing Ltd
Stephen Black	Materials Processing Ltd
Tom McDowell	Kawerau District Council
Brian Derbyshire	Kawerau District Council
Phil Morgan	Ohiwa Holiday Park
John Forbes	Mayor, Opotiki District Council
Dave Reece	Opotiki District Council
Ian Castles	Opotiki Resource Recovery Centre
Heidi Petterson	Tauranga District Council
Murray Kliskey	Tauranga District Council
Ingrid Chettleburgh	Perrys Environmental
Jeff McLaughlin	Perrys Environmental
Marty Hoffart	Environmental Education for Resource Sustainability Trust (EERST)
Nicole Masters	Tigercast Worms

People who attended evening events;

Pippa Russell	The Waste Exchange
Daphne Bell	Hamilton City Council
Robert Brodnax	Environment Waikato
Jenni Vernon	Environment Waikato
Felicity Fahy	Environment Waikato
Graeme Norton	Responsible Resource Recovery Ltd
Peter Harris	Mayor, Waikato District Council
Mike Safey	Waikato District Council
Trevor Stutteridge	Forest Research Institute
Don Riesterer	Chairman Board of Trustees, Zero Waste New Zealand Trust
Josie Riesterer	Don's Wife
Dave Reece	Opotiki District Council
Ian Castles	Operations Manager
Tom McDowell	Kawerau District Council

7.0 Full report on bus tour

Monday May 9th

The Northern North Island Zero Waste Bus Tour began at the **North Shore City Council Chambers** with a presentation by Bradley Nolan on their joint collections contracts with Waitakere City Council; the new integrated waste collection service, the proposed levy system, wheelie bins and kitchen waste. The new joint collection system and wheelie bins for recyclables aim to increase the volume of recyclables collected, reduce manual handing and reduce the litter problem.

The participants boarded the bus, driven by Murray, and the one-day participants into their cars, for the first leg of the journey to **Waitakere Refuse and Recycling Transfer Station**. Dick Fong took the group around the Transfer Station which receives and processes wastes such as domestic and commercial refuse, glass, plastic, metal, wood, greenwaste and clean fill. Some separation occurs before the residues are taken to landfill. There is a hazardous waste facility and 90% of the materials are recycled; oil → heating fuel; batteries → recycled; paint → recycled.

Dick Fong (left with hardhat) talks to bus group, at Waitakere Transfer Station

Items being separated for recycling

Re-use Items ready for sale

Tony Gibbs, and his team from Perrys Environmental, operates the 10 chamber Vertical Compost Unit which processes greenwaste, from the local area, into a mulch grade product with a pH 7.1. Each chamber has a 25m³ capacity. The VCU process is on a 10 day cycle. Inside the chambers the temperature reaches 60-70°C and 7 per cent is discharged daily. The bulk of the product is transported to a Perrys site in Tauranga, with some being sold by a local garden supply outlet, and some going to other businesses and developments in the region.

Perrys Environmental 10 Chamber Vertical Compost Uni at Waitakere City Council's resource recovery centre

The tour continued to **Manukau Institute of Technology** for the official opening of the Tat-G Organic Digester, at the School of Horticulture site. Manukau City's deputy Mayor made the official opening. It is the biggest solar powered, industrial-sized, worm-driven "digester" in the country. It takes 50 – 120kg of organic material per day from the Hospitality School, café, and horticultural unit and turns it into a product suitable for the horticulture students to use as a growing medium. Research will be undertaken into ways that the bi-product can be used to enhance the soil and help stimulate plant growth. The use of an on-site option for the organic wastes results in reduction of MIT's waste collection bill.

Tat-G Organic Digester at MIT

Opening ceremony for the Tat-G at MIT

Inside the Tat-G

Worms processing feedstock

The tour then went to **Envirofert**, at Tuakau, where Gary Mcguire operates a waste disposal and recycling business. The site includes: a 40 hectare greenwaste disposal area; a 16 hectare vermiculture operation; and a 15 hectare cleanfill area in cells for clay, concrete, glass and gib-board. Envirofert has been through strict and rigorous consent processes. The sites, on the bank of the Waikato River, are regularly monitored and tested. Scientist, Paddy Shannon, is onboard for field trials in the local growing area, of a variety of growing mediums. A new vermicast based product is currently being marketed and sold.

Garry McGuire (centre) talks about vermiculture and Envirofert waste operations.

The evening event was held at Sohl Restaurant in Hamilton. Guests included: Daphne Bell from Hamilton City Council; Robert Brodnax, Jenni Vernon, and Felicity Fahy from Environment Waikato, Peter Harris Mayor of Waikato District Council and Mike Safey from Waikato District Council.
Pippa Russell from the Waste Exchange gave a presentation describing the work that they do and highlighted the passion of the people involved and the positive results that are achieved for those on either end of the waste exchange process.
Robert Brodnax from Enviroment Waikato presented on the regional waste issues.

Tuesday May 10th

The first stop of the tour was to the **Fonterra** milk processing plant at Te Rapa. It is the largest site in the North Island processing two million tonnes of product per annum. It is also the sixth largest processing plant in the world.

Spring Humphries gave a tour of some areas of the plant and spoke about the efforts and results being achieved at Fonterra through their Environmental Policy. These include regulation and compliance, reduction in first stage inputs, a packaging accord, and the eco-efficiency programmes for offices and sites. Seventy five per cent of the goal has been achieved at a number of their sites, resulting in reduction of waste to landfill and huge cost savings. They are targeting the areas that give the big results first. Some of the initiatives include an onsite 'garbologist' who collects wastes to a central point; installed balers at point of use; baling recyclables; baling waste; filling bins with baled rubbish, more tonnage per bin, transport cost the same; redesigning bags so that the plastic lining is separate from the paper outer for recycling; sugar bags are sent back to Chelsea sugar for reuse resulting in a $1 million savings in bulk bags; recycling boxes on offices desks; standard colour coded bins; changing manufacturing processes; and reusing containers. Paper waste products are returned to the supplier, FullCircle CHH for recycling. Staff training, communication and education plays an important role.

The second stop for the day was at the **Materials Processing Ltd** site at Tawa Street. Waste products are stockpiled and processed. An example is concrete. This is diverted from landfill, processed into aggregates and sold into the market. The service is widely used by contractors and economically successful.

Hamilton Transfer Station was the next stop. Sven Hanne showed the participants the sights including the recycling drop off point, the separation of recyclables from the waste stream and the reuse shop. **Hamilton City Council** contracts the waste management operations to Envirowaste Services.

Hamilton Transfer Station recycling and collection areas

Refuse drop off area

Hamilton City Council Charges

Cars	$8.00	
Van & Utilities		$20.00
Small Trailers	$20.00	
Large Trailers & Trucks	$95.50	tonne
Test Weighs	$10.00	
Minimum Charge on Weighbridge	$19.00	

Penalty for Avoiding Weighbridge $60.00

The tour then went ‘on the farm’ at **Orini Downs**. On this 2500 acre property, there are 1800 cows and a biodigester that uses dairy farm effluent to produce methane and a non-toxic, certifiable organic fertiliser. The biodigester is designed to be environmentally sustainable - the product is safe for use on the land, composts an organic animal waste product; and produces energy.

Feeding bays

Biodigester

Roy Harlow from ISE Ltd, explains the process to the group

The waste from the feeding bays is washed into effluent ponds then pumped into tanks. Each tank contains a water bath and methane is collected and stored in the gas holding vessel. All equipment is externally mounted so is easy to service and use. While the unit is 24 V DC, it produces 3 phase power at 22-25 KW for 7 hours a day on 1400ltrs of effluent.

The tour continued to the **Cambridge Resource Recovery Centre,** run by Materials Processing Ltd. This is a public drop off recycling facility. Every type of plastic is collected here from one to seven as well as paper/cardboard, and glass. The bins for

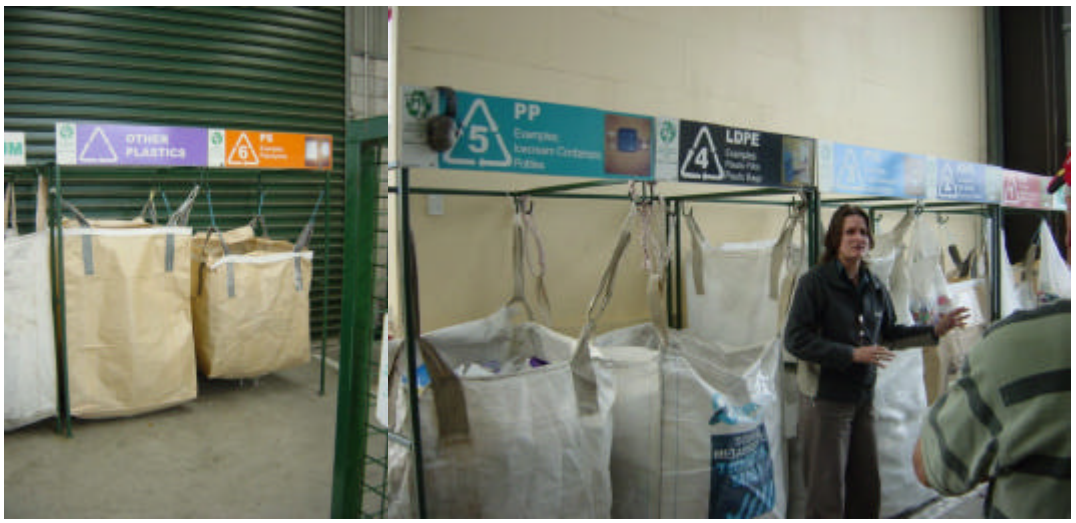
each material are clearly labelled with symbols writing and photos for easy identification for sorting.

Recycling charges

Bag	$2
Car	$10
Van/Ute/Trailer	$15

Recycle 5 times and get the 6th time free!

The staff do a variety of jobs, which helps provide job satisfaction and up-skilling. Research, trials and testing of a plastic lumbar product using recycled material is also being carried out.



Collection and separation area for all plastics

Participants get their hands on the lumbar

Lisa de Haan (MPL) talks about the merits of plastic lumbar molding

The **Matamata Transfer Station** was the next stop for a tour guided by Miljenko Pavlinci. The transfer station is one of three in the Matamata-Piako district and it provides a drop off facility for glass, cans, plastics (1 & 2), scrap steel, whiteware and greenwaste (which is shredded by a contractor and used in the composting process).

A July 2004 audit showed that 34 per cent of the waste stream at the Matamata Transfer station was organic material, 14 per cent plastic and 13 per cent paper. Of the overall total, it was suggested that 70 per cent of the Council's comestic collection and 60 per cent of the general waste, could be recycled.
There is a single chamber VCU, 25 m^3 at the transfer station which processes hatchery wastes and greenwaste. They have a contract with Inghams to take their hatchery wastes and this is delivered in drums. The material goes through a 5 day cycle, reaching temperatures of 70° C. The discharge mulch product is then composted for a further 6 weeks in windrows on site. The final product has a high nutrient content due to the make up of the feedstock (chicken/egg wastes). AgResearch are using the product in field trials.

Local resident dropping off greenwaste

Single chamber VCU system

Wednesday May 11th

The **In-Town Recycling Centre,** in the center of Rotorua, was the first tour site for the day. The Resource Recovery Facility is managed and operated by MPL. Roselyn Sievers from Rotorua District Council, showed the group around the recycling depot, which was established four years ago. The Urban Ore shop is on leased Maori land and over 35,000 people used the shop which shop employs 2-3 staff whose wages are paid from the sales. The shop was running at a loss until a passionate staff member took it over and now it is running at a profit.
The In-Town Recycling Centre provides an alternative to kerbside collection which is

Urban Ore shop, Rotorua

Roselyn Sievers (centre left) talks about the increases in recycling volumes and landfill diversion rates

not carried out in Rotorua Central. It accepts all plastics and materials that are not collected at kerbside such as metals and batteries. It is open seven days a week. The success of the depot has shown in the 77 percent growth per annum and high usage rates. Advertising was done over the radio and through word of mouth - now everyone knows about the site. The question of commercial collections remain in high tourist areas

Roselyn took the tour on to the **Rotorua District Council Landfill,** which provides greenwaste and concrete recycling, and a hazardous materials service. Peter Fredricsen talked about the mobile concrete crusher which turns concrete into aggregates for use in roading, drainage, builders mix and other specialised blends. Rotorua District Council will be implementing differential pricing for tipping at landfill. The fee for tipping concrete will be cheaper than taking it to landfill, thus encouraging landfill diversion and recycling.

MPL ConcreteCrusher

Peter Fredricsen talks about concrete crushing

The next stop was the Carter Holt Harvey - Materials Processing Ltd site at Tokoroa. Here MPL is contracted by CHH to take their solid wastes, this includes concrete, metals, conveyor belts, wood, cardboard, pulp, and machinery parts etc.

Stephen Black (MPL, centre) shows the sorting/separation process

Timber for use as hog fuel

Piles of material for recycling

After lunch and a scenic drive, the next stop of the tour was at **Kawerau**, where Tom McDowell from Kawerau District Council led the group. He showed examples of the kerbside collection happening in the community. He spoke of what had been achieved (reduction in household waste), what the problem areas were (residual waste in with greenwaste, fly tipping), and future plans for resource recovery (education) and achieving zero waste. It is also important for the local Iwi that rubbish from outside the district is not brought into the area.
The residential area has a weekly kerbside collection. They have a 60 litre bin for recyclables, a 60 litre wheelie bin for household residues and a 240 litre wheelie bin for green waste (collected fortnightly). There have been dome objections and confrontation between the public and the council over waste issues.
Tom then took the group on to the landfill (unlined) where he and Brian Derbyshire spoke about user pays, the closing of the landfill (in June) and future plans such as: building a recycling drop off centre on the way up to the landfill. The council has found it too expensive to develop a lined cell for filling. The tipping fee for landfill will be $200 tonne of residual rubbish, where it was once free and open 24hrs each day for the public to dump anything and everything.

Charges

	Recycling	Non-Recycling
Car	$3	$10
Trailer	$7	$18

Grind greenwaste	$11m³
Cut a tyre into ¼	$2
Shred a tyre	$6

Kawerau Landfill

The last stop of the day was at **Ohiwa Holiday Park**, Opotiki. Phil and Lana Morgan have won the 2004 "New Zealand Sustainable Business Award" (Small Business Category) for their efforts in managing a sustainable business through conservation of the environment, use of solar energy for water heating, waste management and cultural values.

Taking a look around the holiday park

Recycling area at Ohiwa Holiday Park

The evening event at the Opotiki Golf Club was hosted by Dave Reece, Council Engineering and Service Manager. The population serviced by the Opotiki District council is approximately 9,500. Three Resource Recovery centers have been set up at: Opotiki, Te Kaha and Waihau Bay. A waste reduction initiative has also been undertaken by Ngaitai Iwi Authority at Torere in conjunction with the Opotiki District Council which has proved successful as an alternative to skip bins. Six permanent and two part-time people are employed.
Since its adoption of 'zero waste' in November 1998, Opotiki has reduced its waste by 90 per cent (10,000 tonnes per annum to 1,000 tonnes, April 2005). This is a result of RRC charging; recycling programmes at the RRC's; education; mulching of greenwaste; and the implementation of a kerbside recycling collection.

Estimates 2005/06 Annual Plan – Cost Centre Totals

	2002/03 Budget	2002/03 Actual	2003/04 Estimate	2003/04 Actual	2004/05 Estimate	2004/06 Estimate	2006/07 Estimate	2007/08 Estimate
Resource Recovery Facilities	(10,367)	21,083	(8,700)	37,707	(8,880)	(44,350)	(2,230)	0
Public Space Litter	0	(8,023)	0	(9,449)	0	0	0	0
Urban Collection	0	(184)	0	(6,314)	0	0	0	0

The Council has compiled a list called "The Givens", which are a list of fundamentals for reducing residual waste to the minimum. The list includes councils being responsible for managing the process, contracting out aspects which will deliver the most efficient and effective outcomes and that contract wording must be explicit to ensure the required outcome.
The focus is on the importance of recycling recyclable materials, and therefore reducing volumes and costs to transport residue wastes out of the district. The residential kerbside collection includes a 45 litre recycling bin for paper/cardboard, plastic bottles and plastic bags, steel and aluminum cans, and glass bottles and jars and an official 25 litre plastic bag for residual wastes. This encourages people in the community to be responsible for their waste and to recycle and to reduce the amounts of residual waste. An education programme was put into place including

clear and practical tips on waste reduction, recycling and re-use and repair. School children are being taught about worm farming and schools encouraged to adopt a Zero Waste Schools Policy for future waste reduction.

The first stop for day four of the tour was at the **Opotiki Resource Recovery Centre**. The building was previously a kiwifruit shed that was redesigned inside for flow of vehicles and materials. Here the staff are passionate about recycling and also make some of the signs. All materials brought in must be sorted before the staff will allow entry. The charges are based on the percentage of recycled material, and on whether the load is a car, small trailer size or large trailer. Car bodies, tyres and greenwaste also have particular costs. For every $1 taken at gate, there is a $4 subsidy from rates. All seven grades of plastics are accepted There is an indoor shop and also outdoor bays for reusable materials.

Opotiki Resource Recovery Centre

Opotiki Resource Recovery Centre Charges

	Total Recycled Min.	75% Recycled	50% Recycled	25% Recycled	Non Recycled
Car	$2	$4	$6	$8	$10
Small Trailers Utes/Vans	$5	$7	$10	$13	$16
Large Trailers	$10	$14	$20	$26	$32

Non-household, Commercial Loads and Loads Greater than 2m³:

Totally Recycled	$8 per m³
Not Recycled	Not accepted
Car Bodies:	$25 each

Green Waste: Smaller loads of green waste will be charged at 50% recyclable
Loads larger than 2m³ will be charged at $10 per m³

Graph showing Residual Waste Reduction Progress

Sorting bins at Opotiki Resource Recovery Centre

Ian Castles talks about the bottles sorting process

Outdoor bays at Opotiki Resource Recovery Centre

Next stop on the tour was the **Te Maunga Compost Site, Transfer Station, Resource Recovery Park and Solvent Recovery Centre.** Here waste to landfill is charged at the 'real costs' $98 per tonne rising to $105 per tonne. There is a private weekly kerbside collection service and a council rubbish collection.
Perrys Environmental operates the compost site which was originally owned by the Attwood family where they composted lawn clippings. This led to providing a compost product for use on kiwifruit. A shredder comes every two weeks to shred the greenwaste which is then mixed with chicken waste and carbon matter. The material is composted in turned wind-rows for six months, and then screened to under 20mm. The product is certified under HSNO. It is sold in bulk to kiwifruit markets, seasonally. The product is tailor made for the market, and includes vermicasts, chicken manure and other ingredients. The market defines the product.

The site is large and there is potential for secondary industries to establish. One business already established is a Solvent Recovery Centre. Waste solvents are collected, distilled and sold back to the market as a cheap thinner. For a business to set up, the Council require a 12 month proof of business venture, $10,000 bank bond and a three monthly check that business is progressing. New opportunities include green concrete as a cheap builder's mix, and a slurry wash providing a cleaning service then mixed in with builders mix.
Future plans for the site include development for recreational purposes such as equestrian areas, public walkways and sculpture.

Wind-rows at Te Maunga Compost Site

Over lunch, Marty Hoffart from **Environmental Education and Resource Sustainability Trust (EERST)** spoke to the group about local community waste projects. These include:

- School education programmes (throughout 38 schools), which has been running for 12 years. Education includes topics such as: home composting with worms, landfills, reduce, reuse, recycle, sustainability and the future.

- Cleaner Production for businesses and industry, which has been running for 3 years and includes: education, waste audits, reports – waste management plan.

Nicole Masters from **Tigercast Worms** then spoke about worms, commercial worm farms, worms in schools and the joint partnership between Tauranga City Council and Tigercast Worms to establish a household culture of home worm composting. A trial was carried out in 2003, where participants were provided with a complete worm bin system and given an educational workshop, indicated that the organic fraction of households' refuse bags had reduced by 70 per cent. Another trial to be completed in June 2005 is investigating the types of assistance required by householders to confidently maintain a worm bin.
Thirty-seven schools including some preschools have set up worm farming operations. The local daycare centre, which takes 50 children, produces 50 kgs per day of food waste, which is composted at the Compass Community Village. Workshops and comprehensive brochures on worms and composting are available for the community.

The last stop of the tour was at the **Malemie Street Transfer Station** which is operated by Waste Management. The greenwaste collected goes to Perrys Environmental for composting. Hazardous wastes are accepted. There are recycling bays for plastics, glass and paper/cardboard. Unsorted recyclable and residue wastes is accepted for land fill.

Malemie St Weighbridge and Charges

Drive through area for Recyclables

Charges (all inclusive of Gst)

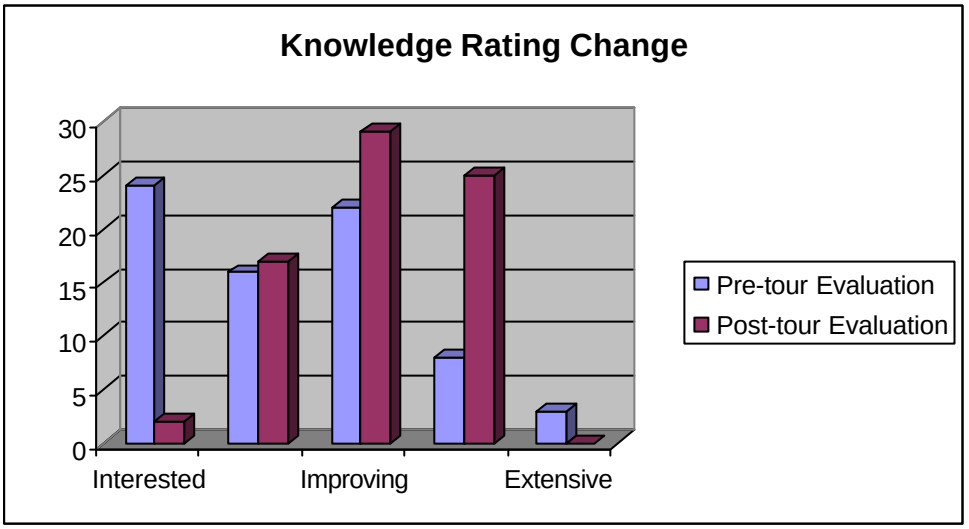
General Waste	
Cars	$4
Trailers, Station Wagons Vans, Utes, RVs	$98 per tonne
Trucks	$98 per tonne
Compostable Greenwaste	
Cars	$3
Trailers, Station Wagons Vans, Utes, RVs	$44 per tonne
Trucks	$44 per tonne

Results of Evaluations

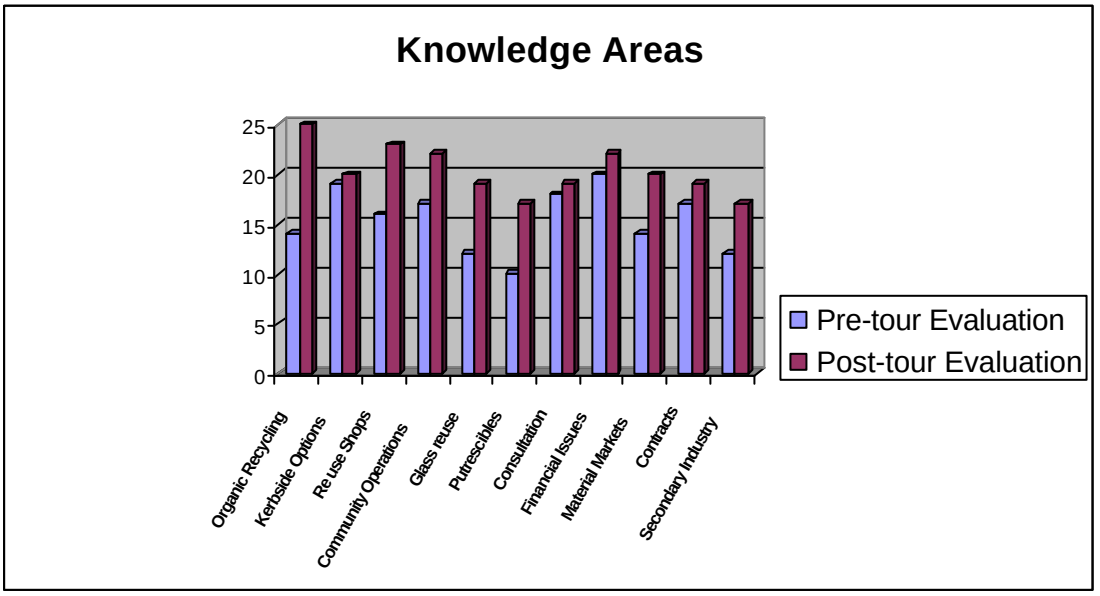
The participants on tour received an initial pre tour questionnaire which was collected immediately. As they left the tour a more extensive post tour questionnaire was provided. It was optional for participants to identify their responses.

Overall 40 per cent of the participants, who returned questionnaires, rated the bus trip as either 'very good' or 'excellent'. 60% rated the tour as 'average'; there was no ratings for either poor or fair.

The participants were asked to rate their knowledge/experience from 'interested' through 'improving' to 'extensive' in 11 named areas of interest, (such as: contacts/networks and recycling options), before and after the trip. Overall, as seen in the graph below, the knowledge of the participants at the start of the tour was low, showing a strong shift to improving-extensive end of the scale.



The areas which had the greatest improvements were: Organic Recycling, Re use shops, Glass reuse and Putrescibles. The areas of knowledge with the highest level of understanding at the end of the tour were: Organic Recycling, Re use shops, Community Operations, and Financial Issues.



There was some subjective variation in the responses to the establishments visited and some incomplete questionnaires. Though the results indicate that the visit to the Opotiki Resource Recovery Centre was an excellent centre for learning, as well as Orini Downs BioDigestor, Cambridge Resource Recovery Centre and Plastic Lumbar Plant, Rotorua In-town Recycling Centre and Fonterra Te Rapa.

The most useful aspects of the tour for the participants were:
- Inspiration to focus on the target of Zero Waste
- Raised awareness
- Action in practise
- Recycling Stations

The food, the accommodation, the usefulness of having an advisor and the organisation of the tour were all rated as ‘average’. One councillor felt the food and accommodation were below average.

Suggestions for future improvements were:
- Having a daily questionnaire
- Include new ventures, as they start, in the tour
- Reduce kms to allow more time at sites
- More in depth discussions
- Stop people using their own cars
- More frequent tours
- Slightly shorter tours – 3 days
- More coordination of site visits

Due to the size of the trip and the comings and goings of some councillors due to commitments, the results of the questionnaire could not be regarded as statistical. However, the trend of learning and the positive response to the trip was universal.