



# Industry Guide to Zero Waste

Towards Zero Waste and a sustainable New Zealand

**AUGUST 2002**



# Dedicated to Making a Difference

## WHAT IS THE NZBCSD?

The New Zealand Business Council for Sustainable Development (NZBCSD), established in May 1999, is a coalition of leading businesses united by a shared commitment to sustainable development via the three pillars of economic growth, environmental protection and social progress.

The NZBCSD is a partner organisation to the World Business Council for Sustainable Development (WBCSD), a coalition of 150 international companies with members drawn from more than 30 countries and 20 major industrial sectors. We also benefit from the WBCSD's global network of 30 national and regional business councils and partner organisations, involving some 700 business leaders globally.

## OUR MISSION

To provide business leadership as a catalyst for change towards sustainable development, and to promote eco-efficiency, innovation, and responsible entrepreneurship.

## OUR AIMS

Our objectives and strategic directions, based on this mission include:

**Business Leadership** – To be the leading business advocate on issues connected with sustainable development;

**Policy Development** – To participate in policy development in order to create a framework that allows business to contribute effectively to sustainable development;

**Best Practice** – To demonstrate business progress in environmental and resource management and corporate social responsibility and to share leading-edge practices among our members; and

**Global Outreach** – To contribute to a sustainable future for developing nations and nations in transition.

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## Members

3M New Zealand Ltd  
BOC Gases New Zealand Ltd  
BP Oil New Zealand Ltd  
City Care Ltd  
Deloitte Touche Tohmatsu  
Fonterra Co-operative Group Ltd  
Hubbard Foods Ltd  
Interface Agencies Ltd  
Landcare Research  
Living Earth Ltd  
Meridian Energy Ltd  
Mighty River Power Ltd  
Milburn New Zealand Ltd  
Minter Ellison Rudd Watts  
Money Matters (NZ) Ltd  
Morel & Co  
Natural Gas Corporation Holdings Ltd  
NIWA  
Palliser Estate Wines of Martinborough Ltd  
Port of Tauranga Ltd  
PricewaterhouseCoopers  
Richmond Ltd  
Sanford Ltd  
Shell New Zealand Ltd  
Simpson Grierson  
Telecom New Zealand Ltd  
The Boston Consulting Group  
The Warehouse Group Ltd  
Toyota New Zealand Ltd  
Transfield Services (New Zealand) Ltd  
Transpower New Zealand Ltd  
TrustPower Ltd  
Urgent Couriers Ltd  
URS New Zealand Ltd  
Vodafone New Zealand Ltd  
Waimangu Volcanic Valley Ltd  
Waste Management NZ Ltd  
Watercare Services Ltd

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# Introducing the NZBCSD Zero Waste Project



**Stephen Tindall,**  
Chairman, New Zealand  
Business Council for  
Sustainable Development  
(NZBCSD) and founder  
of The Warehouse

The NZBCSD is dedicated to making a difference in creating a sustainable New Zealand. New Zealand's positioning as a clean and green country is important for trade and tourism as well as the quality of life of current and future generations.

## Message from the Chairman

We've written this Industry Guide to Zero Waste to show businesses how to capture the significant benefits of eliminating waste.

We hope all businesses will rise to this challenge and sign up to Zero Waste.

The business case for waste minimisation is simple: "Waste is a cost and cost reductions enhance the bottom line".

We are a wasteful country. Annually we dump around 7 million tonnes into our landfills and cleanfills. That's around 2 tonnes of lost resources for every New Zealander. This is a cost to us and our children who live with our legacy

of declining resources, toxic leachate and greenhouse gas emissions.

The Guide tells some great stories about 8 NZBCSD companies and their people that follow Zero Waste. The Guide is not a technical manual but a roadmap for the Zero Waste journey that starts with 5 key steps:

1. Take Direct Action
2. Change the Rules
3. Foster New Ideas
4. Communicate and Educate
5. Monitor and Feedback

I challenge New Zealand businesses to commit to the Zero Waste journey. Experience shows it will pay a dividend.

Stephen Tindall



**Dr Rodger Spiller,**  
Executive Director,  
New Zealand Business  
Council for Sustainable  
Development (NZBCSD)

Businesses throughout the world have found that reducing waste reduces costs and increases profits.

The World Business Council for Sustainable Development (WBCSD) has encouraged this through “eco-efficiency” which, in its simplest terms, means creating more goods and services with ever less use of resources, waste, and pollution.

## Foreword

In 2000, the WBCSD launched the report “Eco-efficiency: creating more value with less impact”. This report demonstrates waste reduction or eco-efficiency opportunities within almost every aspect of business operations including:

- Re-engineering processes;
- Re-valoring by-products;
- Re-designing products; and
- Re-thinking markets.

This Zero Waste Guide is a practical guide to embarking on the eco-efficiency journey. It demonstrates how many New Zealand companies have already started and encourages all businesses to take advantage of the opportunities that lie within waste reduction.

On behalf of the NZBCSD I wish to acknowledge all those who have participated in this project. The leadership example of the eight participating members deserves special thanks. These pioneering businesses are 3M New Zealand, Living Earth, Palliser Estate Wines of Martinborough, Port of Tauranga, The Warehouse Group, URS New Zealand, Waste Management New Zealand, and Watercare Services. As the Project Consultants, Waste Not have demonstrated great commitment and expertise on how businesses can embark on the Zero Waste journey. Thanks also to the Project Champions, Rob Fenwick, James Marshall, Kim Ellis and Stephen Tindall and to my colleagues on the NZBCSD Executive Team for their substantial contributions to this initiative.

This report and further information are available on the NZBCSD website at [www.nzbcsc.org.nz](http://www.nzbcsc.org.nz).

Dr Rodger Spiller

## What is Zero Waste?

Zero Waste is a concept that has been growing rapidly around the world and in New Zealand since it was first crystallised six years ago.

The principle of Zero Waste is akin to such principles as “zero accidents” or “zero defects” – which are now well established in manufacturing. By setting an extreme target for waste reduction, new levels of innovation and efficiency are unleashed. Zero Waste is a way of thinking, and a path to travel, rather than an absolute. Subscribing to Zero Waste does not mean instantly eliminating every last piece of waste whatever the cost.

The concept of Zero Waste and the thinking behind it are revolutionising approaches to waste management. Because it is a relatively new paradigm, the breadth and depth of the ideas and practice surrounding it are still evolving. The key principle of Zero Waste is that it defines “waste” as something that is simply not acceptable. This sidesteps debate about what a “reasonable” level of waste is, and instead puts the focus on steadily working towards a life without waste.

Ultimately, Zero Waste means a 100% resource-efficient economy where, as in nature, material flows are cyclical and everything is reused or recycled harmlessly back into society or nature. “Waste” as we think of it today will cease to exist because everything will be viewed as a resource.

The current business model is based on the industrial revolution assumption that the earth provides an infinite source of raw materials, and an unlimited capacity to absorb our waste products. This assumption is clearly wrong and businesses now need to concentrate on creating more goods and services, while reducing waste and resource consumption.

Zero Waste is based on the understanding that all of the materials we utilise are resources, and only become waste through poor management. In practice, this means minimising waste during production as well as designing products that function cleanly and can be reused or recycled at the end of their lives.

Promoting Zero Waste helps fulfil the NZBCSD aim of providing business leadership on environmental issues as well as demonstrating best practice and progress towards sustainable development.

Zero Waste is about the elimination of all forms of waste from production systems, including solid, liquid and gaseous wastes. The NZBCSD has chosen to focus on achieving zero solid waste in industry. Solid, liquid and gaseous wastes are interrelated, therefore the focus on one type necessarily leads to addressing the others.

### Major international businesses aiming for Zero Waste include:

- Ricoh Group;
- Toyota;
- Interface Carpets;
- Bell Canada;
- Kimberley Clark;
- Du Pont Inc;
- Hewlett Packard;
- Honda Motor Corp; and
- Xerox Corp.

These companies are becoming more competitive than their competitors – not only by drastically reducing waste disposal costs, but also by promoting their sustainable business practices and capturing customer loyalty.

(Information source: Zero Waste NZ Trust (2001) “The End of Waste”)

## The Business Case For Zero Waste

In 1991 the BCSD (the precursor to the WBCSD) coined the term “eco-efficiency” to describe the business end of sustainable development. The term is now in wide usage around the world and is continually evolving as a concept. In simple terms, eco-efficiency means creating more goods and services while minimising resources, waste and pollution. Zero Waste is in essence the ultimate expression of eco-efficiency. It is the removal of an endemic inefficiency – waste – from the system.



It is important to understand that eco-efficiency and Zero Waste are not simply about making incremental improvements in existing practices and habits. On the contrary, they should stimulate creativity and innovation in the search for new ways to do business. The application of eco-efficiency and Zero Waste concepts is not limited to a manufacturer’s plant and management, but is most effective when it takes place throughout the entire supply chain of a product or process.

Becoming more efficient makes good business sense. Eco-efficiency and Zero Waste call for businesses to achieve more value from lower inputs of materials and energy and with reduced emissions. Waste does not enhance customer or stakeholder value and therefore ultimately has no place “in business. Zero Waste can potentially enable businesses to maximise the

amount of product per unit of raw material and reduce the cost of production. Additionally, every unit “of material sent to waste carries a disposal cost. Therefore, by reducing waste, businesses can reduce costs.

Some may argue that efficiency in business is not a new concept and that business has always been focused on efficiency. However, reality paints a different picture: in New Zealand 55% of solid waste landfilled is from industrial sources. Cleaner Production programmes have consistently demonstrated impressive savings even with companies that have considered themselves “state of the art”.

Business has proven to be extraordinarily efficient in some ways – such as in its ability to deliver goods and services to consumers – but it has so far been extraordinarily inefficient in its use of resources. The business model in use today evolved with the assumption that the earth provided an infinite source of raw materials and an unlimited capacity to absorb the waste products that were generated. It is clear today that with the growing population, impacts of pollution such as global warming, and continuing reliance on non-renewable materials, this is no longer true and that we are fast approaching the limits of the earth to provide the services we have taken for granted.

There is also a need for New Zealand businesses to support the emerging secondary materials economy through purchasing decisions that favour products manufactured from recycled resources. Zero Waste is about “closing the loop”, and business plays a crucial role in influencing consumer choice and promoting alternative products.

Almost all the countries that import or compete with New Zealand products have higher population densities than New Zealand. These countries will increasingly have to develop or import products that enable them to save on landfill space, reduce pollution, reduce waste at its source and conserve energy. This trend is well established in Europe and North America and is emerging in the more developed Asian countries. New Zealand cannot afford to get left behind by creating products that are limited in their markets as a consequence of being designed for a high waste society. The imperative to gear New Zealand products to meet international best practice in waste minimisation will become stronger as these pressures increase.

The NZBCSD has acknowledged the recent growth of Zero Waste, including its adoption by a number of leading companies such as those profiled in the following pages of this Guide. The value of Zero Waste to business is that it provides a stretch target and a guiding vision for the process of continuous improvement within the eco-efficiency model.

### Waste equals lost profits!

- Waste disposal in Auckland costs \$75 per tonne (landfill charge) plus transport and handling.
- Waste disposal in Wellington costs \$50 per tonne (landfill charge) plus transport and handling.
- When cardboard is mixed with other materials and sent to landfill it ends up costing a business about \$400 per tonne, but when it is recycled it will only cost the business \$40 per tonne.
- It costs around \$1,000 to dump a tonne of screwed up paper (in rubbish bags), compared with \$40-60 per tonne to recycle flat paper (and high waste paper producers can earn \$60-\$100 per tonne through recycling)
- It is estimated that 30,000 tonnes of office paper still go to landfill each year at a cost of approximately \$9 million to Auckland businesses!

(Data presented at the Retail Merchants Association's Zero Waste Workshop, 6 March 2002 by Peter Thorne, GM of Paper Reclaim)

**SNAPSHOT: NEW ZEALAND BUSINESSES REVEAL THE “WHY” AND “HOW” OF THEIR ZERO WASTE JOURNEYS.**

**Insights from the NZBCSD Zero Waste project active participants**

New Zealand companies on the Zero Waste (ZW) journey...	Why our company embarked on the Zero Waste journey...	How we began the Zero Waste journey...	Our major progress to date...	Advice for businesses beginning their own journey...
<b>3M New Zealand Ltd</b> James Marshall, Managing Director	“Zero waste offers a long-term competitive advantage. And it’s the right thing to do!”	“3M began the journey with its ‘pollution prevention pays’ programme, and waste minimisation became part of 3M’s corporate DNA.”	“Installation of the solvent recovery unit was major progress – it showed us that savings can be made through Zero Waste, and that this journey can positively affect the bottom line.”	“Like all programmes, it starts at the top and requires long-term commitment at the very highest level of an organisation.”
<b>URS New Zealand Ltd</b> Mark Drury, Chief Executive	“As environmental consultants and engineers working in waste management we believe in leading by example.”	“We began through the drive and commitment of our staff to reduce the environmental effects of our operation.”	“We have achieved significant waste reduction and the team spirit and commitment to make further improvement.”	“Committed staff are fundamental to success.”
<b>Waste Management NZ Ltd</b> Kim Ellis, Managing Director	“Converting our clients to adopt Zero Waste is a great business opportunity. Waste Management has the expertise and facilities to make it happen.”	“About the time we became a NZ owned company, we started to get serious about waste minimisation when we saw the potential market demand from clients needing help to achieve ZW themselves.”	“We’ve changed the culture within Waste Management from a ‘waste disposal’ mentality to recognising commercial opportunities from resource recovery.”	“Understand that driving waste out of a business is all about driving costs out.”
<b>The Warehouse Group Ltd</b> David Wilson, General Manager	“Stephen Tindall was inspired by Paul Hawken’s book ‘The Ecology of Commerce’, and felt that The Warehouse could make a difference.”	“The journey began by galvanising the troops! It was a matter of getting people together and deciding to make the stores Zero Waste.”	“Incorporating the Zero Waste concept across the entire business, and getting commitment from all departments have been our major achievements.”	“It’s the right thing to do! Just start the journey – don’t just talk about it!”
<b>Watercare Services Ltd</b> Sally Garrett, Business Development Manager	“Zero Waste makes good business sense.”	“We began with many small steps throughout the company, such as recycling office paper.”	“Building awareness has been a major accomplishment – the concept is now widespread amongst employees.”	“Management commitment is crucial.”
<b>Port of Tauranga Ltd</b> Jon Mayson, CEO	“Zero Waste is an environmentally responsible approach to business.”	“The journey started internally with a staff-driven initiative to recycle waste generated in our operations.”	“We now have a wider recognition of Zero Waste issues amongst staff.”	“Start with simple, achievable steps and goals.”
<b>Palliser Estate Wines of Martinborough Ltd</b> Richard Riddiford, Managing Director	“Zero waste is an important and measurable part of our environmental policy.”	“We began by using recyclable packaging wherever possible.”	“All our team are now aware of the absolute need to adopt a Zero Waste policy.”	“Just do it so that NZ companies can truly claim that their products are clean and green.”
<b>Living Earth Ltd</b> Rob Fenwick, Director	“We began the journey because our business depends on it – we are part of the whole waste recovery ethic in NZ.”	“It all began with the realisation of a business opportunity in waste recovery, which led us down the path to embracing the Zero Waste principle.”	“Our major progress has been confirmation that a business based on principles of waste recovery is commercially sustainable.”	“Believe that the outcome is important for you, your business and New Zealand, and do something, anything!”



## Introduction

Eight NZBCSD member companies have become active participants in the Zero Waste project. These businesses have made the commitment to a goal of Zero Waste. They are all at varying stages in the process of implementing Zero Waste in their businesses, but all have found important gains so far in their journey and all have valuable lessons to share.



Green waste arrives daily at Living Earth

### 3M NEW ZEALAND LTD

3M New Zealand Ltd is a global company with sales of US\$16 billion and headquarters located in St Paul, Minnesota, USA. The company sells products in more than 200 countries, operates subsidiary companies in more than 60 countries, and manufactures products in 37 countries. 3M is a diversified technology company with a track record of product innovation, and a brand which is recognised for quality, service and value. The company's 71,000 employees around the world are committed to the company's values:

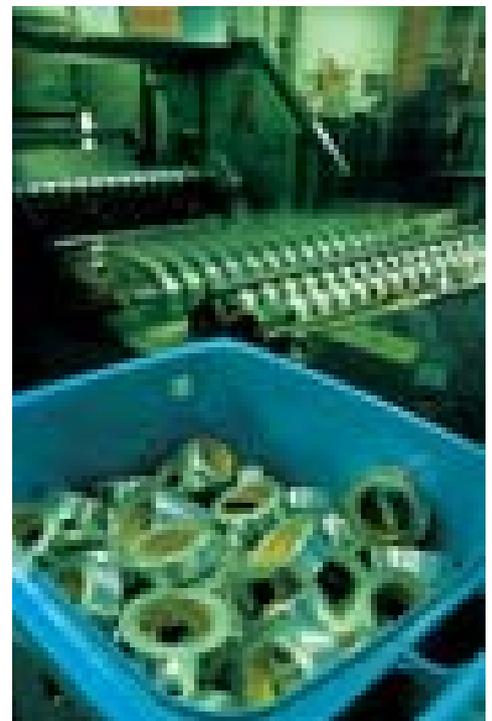
- Satisfying customers with superior quality and value;
- Providing investors with an attractive return through sustained high quality growth;
- Respecting the social and physical environment; and
- Being a company which employees are proud to be part of.

3M has a long record of good environmental citizenship.

The internationally acclaimed Pollution Prevention Pays (3P) programme was started by 3M in 1975 to prevent pollution at source. Since programme inception, more than 4,700 recorded projects have reduced the company's air emissions and releases to water by more than 80%, reduced overall waste by 35%, and saved US\$825 million.

3M has consistently maintained a philosophy of continuous improvement by looking to reduce waste at every stage of a product's life cycle: from design to manufacturing, transport, use, recycling and disposal. Waste minimisation is an integral part of 3M's corporate culture around the world.

The New Zealand subsidiary company, 3M New Zealand, employs 200 people in a range of technical, accounting, sales, marketing and manufacturing roles. The local operation supports sales of 3M products and services in New Zealand and supports export sales of metal foil tapes manufactured in New Zealand.



3M machinery operators recycle all discarded material

## LIVING EARTH LTD

Living Earth Ltd is the leader in New Zealand’s biowaste recovery business, manufacturing high-quality compost and soil conditioners from garden waste, biosolids (sewage sludge) and industrial organic waste such as abattoir refuse. The company began composting 10 years ago, and now operates sites in Auckland and Wellington with 50 employees. In Christchurch, Garden City Compost produces a range of soil products under the Living Earth brand. The company’s annual turnover is around \$7 million.

Living Earth employees share a mission to create products that care for the earth. The company plays a key role in diverting organic waste from New Zealand’s landfills and returning valuable nutrients to the soil. The focus of the business; environmental protection, is reflected in projects it supports, such as the revegetation of Mototapu Island, kiwi recovery projects at Auckland Zoo, and the Karori Bird Sanctuary development in Wellington.

As part of its drive to continually improve the quality of its products, Living Earth is working with its organic waste suppliers to reduce the levels of contaminants. By working with suppliers, Living Earth has been able to identify areas for improvement, thereby reducing the levels of contamination in its compost products and, ultimately, the environment.



Plants thrive in Living Earth compost

Director Rob Fenwick was a member of the Government’s working party to develop the New Zealand Waste Strategy. He is also active in WWF and the Environmental Defence Society and a director of the CRI Landcare Research Manaaki Whenua.

*“Converting our various urban organic wastes into compost is a double whammy for the environment. It diverts our largest single waste stream by far from landfills where it creates leachate and the significant greenhouse gas methane, and instead it produces compost, a vital ingredient in sustainable land management.”*

ROB FENWICK, DIRECTOR, LIVING EARTH

## **PALLISER ESTATE WINES OF MARTINBOROUGH LTD**

Palliser Estate Wines of Martinborough Ltd is one of New Zealand’s most acclaimed wineries, both nationally and internationally. The first vintage was produced in 1989 and the company, with an average annual turnover of \$5 million, now employs 10 full-time staff as well as seasonal workers. The winery was one of the first in the Wairarapa, now one of the country’s finest wine-producing regions.

Palliser Estate recognises that the winery’s greatest asset is the environment, and has been a leader in environmental improvement in the wine industry. In 1998 Palliser Estate and three other New Zealand wineries became the first wineries in the world to be certified to the international environmental standard ISO 14001. Palliser Estate was also the first New Zealand winery to achieve ISO 9002 certification for quality management in 1994.

The Environmental Management System ensures that waste issues are addressed at all levels of activity, from the wine cellars to the vineyards. Palliser Estate is also part of the nationwide “Sustainable Winegrowing” (formerly IWP – Integrated Wine Production) scheme. The scheme recommends and ensures that vineyard management is truly sustainable, on both economic and environmental terms.

Palliser Estate demonstrates its dedication to environmental protection in all aspects of its wine-making activity. Throughout the winery, Palliser Estate has reduced the use of resources such as water, electricity and chemicals. Wines are packaged in recycled and recyclable materials, and an in-house recycling and composting system has been installed.

*“At Palliser Estate in Martinborough, we are committed to preserving and enhancing our environment. As winemakers we are very dependent on the weather and our soils to provide the fruit from which we make great wines. We aim to preserve our soils and minimise any practices, such as the generation and disposal of waste materials, that could alter our climate, or otherwise impact on the ecosystems on which we rely. We are delighted to be one of the pilot companies moving towards Zero Waste.”*

RICHARD RIDDIFORD, MANAGING DIRECTOR, PALLISER ESTATE



Palliser Estate’s harvest depends on a healthy environment

## PORT OF TAURANGA LTD

The Port of Tauranga Ltd is New Zealand's largest export port by volume, handling 40% of all exports. It is the country's second largest container port and third largest import port, with an average annual turnover of \$76 million. The Port has been in operation since 1953. It officially became the Port of Tauranga in 1988 and was listed as a public company in 1992. Currently, around 135 employees work at the main Mount Maunganui and Tauranga sites. The Port is involved with two joint venture sites at Marsden Point and Metroport Auckland as well as the recent purchase of the log marshalling company, Owens Services.

Waste minimisation is addressed throughout the company, from administration offices to the wharves. For many years, Port of Tauranga has diverted thousands of tonnes per year of bark waste from landfill to Dalton's Garden Suppliers, resulting in cost savings for the Port and production of a valuable mulch for soils. The Port's highly motivated staff participate in a total in-house recycling and composting system, and regularly participate in community-based environmental projects, such as waste clean-ups.

*"Sustainability is about recognising that our environmental responsibilities go beyond minimising waste. We must ensure that our actions do not compromise the environment for future generations."*

JON MAYSON, CEO, PORT OF TAURANGA



Port of Tauranga is New Zealand's largest volume export port

The Port of Tauranga is committed to maximising resource use efficiency, minimising waste and continually improving social outcomes and the community impacts of all Port activities. These objectives have been incorporated in a formal environmental policy, and are the focus of Port of Tauranga's new triple bottom line reporting.

**THE WAREHOUSE LTD**

The Warehouse Ltd has been providing New Zealand families with affordable merchandise for the past 20 years, and is New Zealand’s largest mixed retailer. There are now 78 “red shed” Warehouse stores and 36 “blue shed” stationery stores throughout the country, employing 7,000 people. The company’s average annual turnover in New Zealand is approximately \$1.2 billion.

In 1999, under the initiative of founder Stephen Tindall, The Warehouse declared a national corporate objective of zero waste to landfill by 2002. Within 18 months, more than half the stores had voluntarily embraced the goal. The Warehouse established three recycling centres to sort, store and on-sell the materials recovered through in-store recycling programmes.

Although the Zero Waste initiative has resulted in cost savings of around \$200,000 per year, the prime motivator for company employees has been environmental concerns.

The Warehouse has developed a formal Zero Waste Policy and is embarking on triple bottom line reporting to further its commitment to continuous environmental improvement.

*“The Warehouse is committed to reducing its environmental impacts and believes its successful Zero Waste strategy epitomises how businesses need to re-think the ‘old’ ways and think to the future... a sustainable future.”*

GREG MUIR, CHIEF EXECUTIVE, AUSTRALASIA, THE WAREHOUSE



Recyclable materials are sorted and bundled instore by The Warehouse staff



Energy efficiency is part of the Zero Waste ethos at The Warehouse (Wayne Inger, Energy Manager)

### URS NEW ZEALAND LTD

URS New Zealand Ltd is a leading professional services company providing engineering, environmental and project management expertise to communities and businesses across New Zealand, Asia Pacific and other parts of the world. The team of 160 staff based in Auckland, Wellington and Christchurch is part of a global expertise network through parent company URS Corporation, which has 16,000 employees in 38 countries.

URS New Zealand is committed to providing clients with innovative and cost-effective solutions to their challenges, while remaining a good custodian of the earth and its resources. URS New Zealand has an environmental policy and a specific waste management policy, which includes a commitment to operate its offices in a manner

compatible with the wise, cost-effective and sustainable use of natural resources through proactive waste and energy management programmes.

The company measures and extends its performance in an annual sustainability reporting process.

Environmental responsibility is ingrained in company culture – as is continuous improvement – and these are reflected in stakeholder relationships. As URS New Zealand continues to work with clients in resource recovery and waste minimisation, the company itself is “walking the talk”. In-house waste and energy audits have been conducted and initiatives developed and implemented to achieve goals. In just one year the Auckland office has already managed to reduce the volume of office waste generated by 40%.



Shula Newland and Principal Graham Chapman conduct an inhouse office waste audit at URS New Zealand

*“As a member of the New Zealand Business Council for Sustainable Development, and as a team of professionals working with clients on projects that encompass principles of sustainability, we are committed on numerous fronts to making a difference. Not least of all, URS New Zealand recognises the importance of managing its own operations in a sustainable way – “walking the talk” with meaning. As in our work with clients, we are continuously looking for ways to improve performance through innovation and initiatives. Waste minimisation is among the steps we have taken. We recognise this is a journey and we are constantly looking to challenge the way we think and operate. We do so further encouraged by the knowledge that we are just part of a wider group of New Zealanders travelling the same road together.”*

MARK DRURY, CHIEF EXECUTIVE, URS NEW ZEALAND

**WASTE MANAGEMENT  
NEW ZEALAND LTD**

Waste Management NZ Ltd is a wholly owned New Zealand company and is the largest waste management service provider. It has been operating for over 60 years and employs approximately 500 staff throughout the country in all major towns and cities. It recently commenced operations in Australia. Revenue in 2001 was \$153 million.

The mission of Waste Management NZ is to become a world-class operator in New Zealand and selected overseas markets in the provision of resource recovery and residual management services. Traditionally, the company has provided a service centred on the collection, transport and landfill disposal of wastes. Increasingly, however, Waste Management NZ is developing profitable businesses in resource recovery, thus diverting materials away from landfill.

The company’s change in focus is evidenced in its first “Environmental Progress Report” (2001). Waste Management NZ has a 50% joint venture arrangement with Living Earth Ltd. In 2001 Living Earth recovered 72,000 tonnes of organic matter that would otherwise have been disposed of to landfill. In the same year Waste Management NZ collected 87,000 tonnes of inorganic materials for beneficial reuse.

Waste Management New Zealand owns and operates the state-of-the-art landfill at Redvale (the largest in the country, near Auckland) and owns 50% of both the Whitford (Auckland) and Bonny Glen (Palmerston North) landfill sites. At Redvale and Whitford, landfill gas is transformed into electrical energy and exported to the grid, enough to power 3,000 homes.

Waste Management New Zealand is ideally placed to influence the changing face of waste in New Zealand, moving towards Zero Waste and a sustainable future.

*“Moving forward, Waste Management New Zealand Ltd sees eco-efficiency and carbon constraints as key drivers for our business. We are working closely with our clients to deliver practical solutions that will help decouple economic growth from materials’ consumption. To this end we are striving to transform wastes into valuable, recoverable resources.”*

KIM ELLIS, MANAGING DIRECTOR, WASTE MANAGEMENT NEW ZEALAND



Rob Fenwick at the Living Earth composting site in Auckland

### **WATERCARE SERVICES LTD**

Watercare Services Ltd was established in 1992 as a Local Authority Trading Enterprise (LATE) and is responsible for the provision of bulk water and wastewater services to the Auckland region. In 1998, ownership of the company was vested in the city and district councils of Auckland, Manukau, North Shore, Papakura, Rodney and Waitakere. Watercare employs 355 people and is the largest company in the water and wastewater industry in New Zealand with an average annual turnover of \$150 million.

Watercare’s vision is to operate sustainably by being economically viable, environmentally sound and socially responsible. To ensure continuous improvement, the company reports the triple bottom line and has won the award for the best environmental report in New Zealand for six consecutive years and the

Australasian Reporting Awards Environmental Reporting Award in 2002.

Watercare is committed to the sustainable management of its resources and, where possible, enhancing the environment. This includes minimising the environmental impacts of wastewater processing, generating power from hydro and biogas, encouraging the trade waste sources to reduce the contaminant load of the effluent, and investigating opportunities for the reuse of the treated effluent and biosolids.

*“Watercare’s mission is to provide high-quality water and wastewater services that are economically viable, environmentally sound, socially responsible and responsive to customers’ needs. To support this we implemented an environmental management system in 1993, which we are continually improving. A cornerstone to the environmental management system is waste minimisation. For us this means promoting the efficient use of drinking water, minimising leaks and overflows and improving the quality of treated wastewater.”*

KM FORD, CHIEF EXECUTIVE, WATERCARE SERVICES

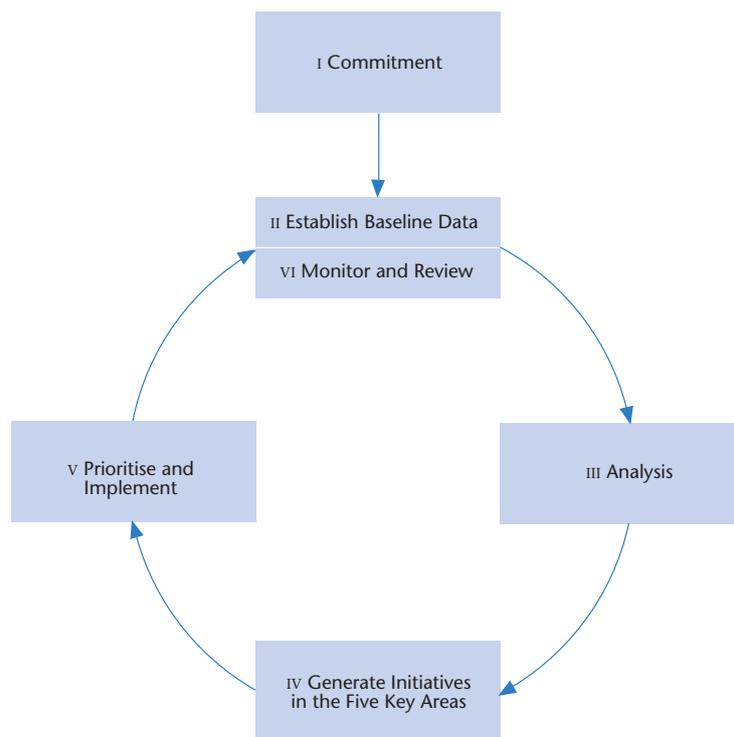


Reducing waste is one way in which Watercare works to protect the environment for future generations

# Steps Towards Zero Waste

## A Path of Continuous Improvement

To commit to Zero Waste means committing to a path of continuous improvement. The continuous improvement process is illustrated by the adjacent diagram, and the steps to the process are summarised on the following page. Greater detail is also provided in the NZBCSD “Guide to Sustainable Development Reporting” “Management Process” section, available in the publications area of the NZBCSD website, [www.nzbcscd.org.nz](http://www.nzbcscd.org.nz).



This Guide is not intended as a how-to manual, but rather to show that Zero Waste is a realistic and desirable objective for any forward-thinking company. The Guide presents

generalised processes, steps and actions, as well as a list of organisations (see the Resources section) that are able to assist companies to develop specific Zero Waste strategies.

### The continuous improvement process

- I The first step in the continuous improvement process is to gain the commitment of the key parties in your organisation. Commitment at the CEO or Board level is crucial, but this commitment must be gained at all levels in the organisation if the initiative is to be successful.
  - Engage the entire organisation in the development of a Zero Waste target, policy and mission statement.
  - Allocate specific responsibilities for the Zero Waste policy to employees at all levels of the business, with overall responsibility held at the executive level.
- II Following this it is necessary to do an initial review of your business operations to uncover the key issues that will have to be addressed and to establish baseline data against which to measure progress.
  - Undertake a waste audit to determine the waste streams generated by the business.
  - Arrange for a Cleaner Production assessment of the company to identify areas for improvement in operational efficiency.
- III The next step is to analyse the data gathered during the review to establish likely priorities.
  - Compile all available data to determine the flow of resources/materials through the business.
  - Identify major waste streams and sources, or materials that are problematic for disposal.
- IV This is followed by a process of generating a series of initiatives that could meet the objectives established by the analysis.

- From the five key areas presented in this guide, select initiatives that will minimise the waste issues identified.
- V The initiatives are then prioritised and implemented.
  - Initially, choose the simple, achievable initiatives to implement, and prepare a plan of action.
  - Gradually implement the more difficult initiatives, maintaining positive momentum for the Zero Waste programme.
- VI Finally the Zero Waste initiatives need to be subject to a process of monitoring and review to establish their effectiveness and to chart progress.
  - Periodically conduct waste audits to monitor the progress of waste reduction initiatives.
  - Regularly review targets and progress with employees.
  - Revisit policies, initiatives and prioritisation based on audits and reviews.

A number of organisations that can assist companies in their continuous improvement process are listed in the Resources section of this Guide.

### WHAT TO DO: FIVE KEYS TO ZERO WASTE

Once the decision has been made to commit to Zero Waste and to the continuous improvement process, the next task is to decide which of the many possible initiatives should be undertaken and what priority they should have in a programme. Although there are likely to be some easy and quick gains to be made, it should be remembered that Zero Waste will not be arrived at instantaneously. Therefore there is a need to ensure that the elements of a Zero Waste programme

are balanced and ordered, and work together over time to bring about the realisation of the Zero Waste goal. An unbalanced programme will sooner or later run up against obstacles that will slow and possibly even halt progress. Five key areas for action have been identified as being essential in a balanced, holistic Zero Waste programme. Action should be taken concurrently in all five areas to ensure a balanced and successful programme.

The key areas of action are set out in Table 1.

**TABLE 1**

Key Area	Description
1. <b>Take Direct Action</b>	Initiatives that deal directly with the waste stream.
2. <b>Change the Rules</b>	Policies, procedures and financial incentives to encourage waste minimisation rather than disposal.
3. <b>Foster New Ideas</b>	Creation of mechanisms to develop and test new management, technical and financial solutions.
4. <b>Communicate and Educate</b>	Informing the staff and stakeholders of the issues, providing opportunity for input and participation.
5. <b>Monitor and Feedback</b>	Assessment and reporting on waste stream characteristics and the success (or not) of Zero Waste initiatives.

The next section demonstrates how the project participants have implemented each of these keys in their businesses. Under each key area one initiative has been highlighted as an effective action undertaken by several or all of the participating companies.



# Case Studies – the Five Keys in Action

The participating businesses have engaged in a variety of initiatives in each of the five key areas. Several stories have been selected to illustrate each key area, with focus placed on the business case for initiatives. The following stories represent only a handful of the inspirational and successful endeavours undertaken by New Zealand companies on the path to Zero Waste.

## Key Area 1 – Take Direct Action

“Direct action involves initiatives that deal directly with the waste stream”.

### In brief:

- The Warehouse separates all recyclable and compostable store and office wastes, operates its own recycling centres, and has achieved savings of approximately \$200,000 per year in disposal.
- Port of Tauranga diverts thousands of tonnes of bark from disposal through a mutually beneficial agreement with Dalton’s Garden Suppliers.
- Palliser Estate recycles all paper, cardboard, metal, bottles and cork generated in the office, winery, vineyard and sales area, and composts or reuses all organic matter including grape skins, stalks and wine tank sediment.

### Checklist

- Key area 1
- Carry out a waste audit.
  - Start an in-house recycling programme.
  - Divert organic waste to composting facilities.
  - Assess facilities and commission upgrades to use more efficient processes and technology.
  - Create an in-house environment free of non-reusable, non-recyclable material. (e.g: ban polystyrene)
  - Reduce office paper use by initiating default double-sided on printers and photocopiers.
  - Adopt purchasing guidelines that emphasise more environmentally friendly products, such as products with a recycled component.
  - Contact the organisations listed in the Resources section for further ideas.

## THE WAREHOUSE LTD

The Warehouse Ltd is a recognised leader in the move towards Zero Waste and has initiated a number of direct waste-minimising actions throughout the company. In-store, source separation of wastes began in 1999. Since then, different systems have been designed for administration offices, customer-accessed areas and stockrooms.

At The Warehouse head office in Auckland, staff have access to recycling facilities for paper, cardboard, bottles, cans and certain plastics. All food scraps are collected for composting in large worm bins located in the gardens. Since the majority of office-generated waste is paper, individual desk waste paper bins are used only for collecting paper and cardboard for recycling. Head office is also a styrofoam-free environment; all staff are issued with their own, personalised mugs, and additional mugs are provided for guests.

The in-store recycling system for customer-generated wastes has evolved since 1999 into a streamlined, user-friendly system for recycling food scraps, paper, cardboard, plastics and coat hangers. The goal is to make recycling just as easy as disposal for customers. In the stockroom, woosacks are used to collect specific packaging items for recycling or reuse. Recovered materials include paper, soft plastics, strapping, polystyrene and hard plastics. Damaged goods are collected and auctioned off.

Signage has been developed to ensure efficient and correct separation of materials.

To handle the volume of materials recovered through source separation, The Warehouse set up three designated recycling centres (in Auckland, Wellington and Christchurch) where materials are baled and stored until appropriate recycling markets are found. Where suitable markets have not been found for certain packaging materials, The Warehouse has approached suppliers to replace their non-recyclable packaging with recyclable alternatives. For example, The Warehouse convinced its CD suppliers to replace difficult-to-recycle polystyrene chips with newsprint.

The Warehouse Environmental Coordinator, Richard Morley-Hall, emphasises that this is not a “rags-to-riches” story. Although savings of around \$200,000 per year have been achieved through reduced disposal costs, the income received through sales of recycled materials is insignificant.

*“We don’t base our justification for the Zero Waste programme on income. Some parts of the programme cost, others earn, but we are really looking at the entire waste stream, and the overall gains are worth it.”*

RICHARD MORLEY-HALL, THE WAREHOUSE

## 3M NEW ZEALAND LTD

3M New Zealand Ltd has a reputation for finding innovative solutions to maximise production efficiency. Waste of any kind is regarded as an inefficiency, and 3M New Zealand continuously develops better means of reducing waste.

From 1990 to 2001, 3M New Zealand has reduced its solid waste index (measured as kg of waste per kg of material outputs) by 44%. This has been achieved through a rigorous system of production monitoring and recycling or reusing all glass, aluminium, paper, packaging, industrial metals and wooden pallets generated in workshops, stockrooms and administrative offices. A key goal for 3M New Zealand in 2002 is a further 10% reduction in waste.

Another example of direct action is 3M New Zealand’s solvent recovery facility, in operation since 1993. By recovering waste solvent from ovens and re-using it in the manufacturing process, 3M New Zealand has realised savings in solvent purchases of around \$500,000 per year. In addition, the facility has reduced atmospheric emissions of volatile organic compounds (VOC) by 92%.

**PORT OF TAURANGA LTD**

Port of Tauranga has been taking direct action against waste for several years. Logs naturally lose bark while being handled as part of marshalling and loading of vessels. As the largest exporter of logs in New Zealand, there is a considerable amount of waste for the port authority to deal with. To solve the problem, Port of Tauranga has reached a mutually beneficial arrangement with Dalton’s Garden Suppliers; the Port provides a storage shed for the bark, and Dalton’s collects it free of charge. The savings in disposal costs for the Port are significant.

Last year thousands of tonnes of bark were diverted from landfill and turned into a valuable soil enhancer. By crushing and composting, Dalton’s is able to “stabilise” the bark to use as an ingredient in potting mix. It has also developed the unique technology to create a product called “Bark Fibre”, which is a direct substitute for peat. In recent years, owing to environmental concerns, there has been a worldwide shift away from using the traditional peat-based growing media. Bark Fibre is a proven substitute for peat with superior physical properties and, as it is produced from a waste product, an ecologically sound option. Many large garden product outlets in Europe, and also The Warehouse in New Zealand (supplied by Dalton’s), prohibit the use of peat in their house-brand mixes.

Port of Tauranga has also been exploring alternative means for dealing with the quarantine waste from international shipping, looking at options such as auto-claving (heat sterilisation) followed by recovery of recyclable materials. In-house, the office recycling and composting systems are developing under the initiative of a highly motivated environmentally and socially aware staff.

**PALLISER ESTATE WINES OF MARTINBOROUGH**

Palliser Estate has been implementing direct waste-minimising actions since 1998 in the offices, winery, vineyard and sales area. Office paper is recycled, except for sheets with printing on one side, which are collected and made into notepads for office use. Drink bottles and cans are recycled, and food scraps from the staff kitchen are put in the compost bin in the garden. Wine bottles, corks and metal capsules from the sales and tasting shop are recycled, and customers can be provided with reused cardboard boxes (made from recycled fibre) to carry their purchased bottles. Boxes are also stamped with a “please recycle” message.

The wine-making process has also been assessed to minimise waste. Grape skins and stalks are given to a local farmer for deer or cattle feed. Sediment from the bottom of the fermentation tanks is collected in a portable tank and pumped onto the vineyard. A special wastewater system enables “clean” wastewater from the winery to be reused for irrigation of trees and lawns.

**Common initiatives**

**In-house recycling: office-based actions with corporate-scale ramifications!**  
 In-house initiatives reflect the corporate commitment to Zero Waste, sending a clear message to stakeholders, clients and employees that the company really does “walk the talk”. Setting-up an office waste reduction system for recycling paper, drink containers and cardboard, and composting food waste is a basic first “direct action” down the path to Zero Waste. However, as The Warehouse, 3M New Zealand, URS New Zealand, Port of Tauranga and Palliser Estate Wines of Martinborough will explain, successful in-house waste minimisation requires careful planning and commitment from all staff. Although some businesses have organised their own office systems, others have enlisted the help of professional resource recovery consultants to design a suitable programme.



Sediment from the wine making process is pumped back onto the Palliser Estate vineyard

## Key Area 2 – Change the Rules

### In brief:

- The Warehouse declared a corporate-wide target of zero waste to landfill by 2002.
- 3M New Zealand follows the Pollution Prevention Pays programme and also applies its “6 sigma” approach to continuously reduce waste.
- Watercare Services is able to investigate and control possible sources of toxic material in its trade waste.
- Living Earth worked with Wellington City Council to promote a Code of Practice to help improve the quality of biosolid waste being used to manufacture compost.
- Waste Management New Zealand is changing the fundamental nature of its operation, shifting the business focus away from waste disposal towards resource recovery.

### Checklist

#### Key area 2

- Set a Zero Waste target.
- Create a waste minimisation company policy.
- Set waste reduction targets in the “terms of trade”.
- Change purchasing contracts to reflect a waste reduction ethic.
- Make suppliers accountable for any non-reusable, non-recyclable packaging they provide.
- Establish short-term incentive plans for employees to meet specific waste reduction targets.
- Challenge business associates to embrace Zero Waste.

“Changing the rules involves looking at policies, procedures and financial incentives to encourage waste minimisation rather than disposal.”

#### THE WAREHOUSE LTD

The Warehouse changed the rules entirely by declaring a corporate-wide target of zero waste to landfill by 2002. Waste is not an option, which creates enormous incentives for source separation and diversion of materials in all stores. To minimise the amount of waste generated in stores, The Warehouse buyers have been given a radical packaging reduction target by way of their “terms of trade” document. This results in buyers and suppliers working together to solve packaging problems, and effectively pushing the Zero Waste concept further along the supply chain.

In addition, The Warehouse has been actively promoting Zero Waste across the retail industry via the New Zealand Retail Merchants Association.

#### 3M NEW ZEALAND LTD

3M has been changing the rules since 1975 with its Pollution Prevention Pays (3P) programme, reducing air emissions by 80%, reducing overall waste by 35%, and saving US\$825 million (figures are corporate-wide). The 3P programme was considered revolutionary thinking in its time, and represented a major shift in the balance of incentives and disincentives for minimising waste in 3M’s manufacturing processes. The concept that pollution and waste are costs to business is firmly ingrained in company culture.

In New Zealand, 3M has a number of systems in place to ensure waste minimisation. Short-term incentive plans have been used and continuous improvement using the “6 sigma” approach is being implemented in the manufacturing and other departments of the business. 3M New Zealand’s contractor management programme also includes environmental elements, ensuring that waste minimisation is also a concern for contractors to 3M New Zealand.

*“Intensive recycling and waste reduction depends on changing whole systems. It relies on distributed intelligence rather than centralised knowledge and on innovation that is widely dispersed across collection, processing, materials technology and product design.”*

ROBIN MURRAY, CREATING WEALTH FROM WASTE

## WATERCARE SERVICES LTD

Biosolids resulting from wastewater treatment represent a huge waste for Watercare to deal with. Over the past 10 years, Watercare has placed significant emphasis on managing the discharges to the sewerage system from industry to reduce toxic substances in sewers, and ultimately the waste treatment plant. This in turn reduces the contaminant load of waste discharged from the wastewater treatment plant, both as liquids and biosolids. Watercare is able to investigate and control possible sources of toxic material in trade waste.

## LIVING EARTH LTD

Living Earth has taken measures to change the rules “up the pipeline” to reduce the waste produced in its own operation.

Living Earth requires a clean, green organic waste stream to produce high-quality compost. In Wellington, where Living Earth combines biosolids from the city council’s wastewater treatment plant and garden waste in its composting process, levels of mercury in the biosolids were at unacceptable standards. Investigations showed that dentists were the major source of mercury entering the sewage system. By collaborating with the New Zealand Dental Association, Living Earth and Wellington City Council were able to promote a Code of Practice for dentists to eliminate mercury from the sewer system.

## WASTE MANAGEMENT NEW ZEALAND LTD

Waste Management NZ has foreseen for some time the policy agenda moving towards waste minimisation and resource recovery. As a result it is changing the fundamental nature of its operation, progressively shifting the business strategy focus away from waste disposal and towards resource recovery. A key element of the company’s move to start unbundling the waste stream is its subsidiary company Living Earth, which composts organic material. Waste Management New Zealand also collects inorganic material, such as glass, plastics and metal, for recovery. The company has also started offering waste recovery and recycling audits for its clients.

The company is active in the development of national policy and contributed to the framing of the recent “The New Zealand Waste Strategy – Towards Zero Waste and a Sustainable New Zealand”. Waste Management New Zealand was also actively involved in the production of the Waste Management Institute of New Zealand’s landmark document, “lifeafterwaste” (2001), which presents a new, national vision for waste and resource recovery.

*“Waste minimisation and resource recovery are now very much priorities in terms of our business strategy.”*

WARWICK GIBLIN, CORPORATE ENVIRONMENTAL MANAGER, WASTE MANAGEMENT NEW ZEALAND

## Common initiatives

Changing the rules includes changing corporate structure and culture.

A sure sign that a business is committed to Zero Waste is the appointment of key staff with specific environmental and waste minimisation briefs. The Warehouse, Watercare Services, 3M New Zealand, URS New Zealand, Palliser Estate Wines of Martinborough, and Waste Management New Zealand have all assigned the task of implementing Zero Waste initiatives to managers at various levels of the corporate structure, and allocated the time needed to deal with the new responsibilities. In the case of Watercare, 3M New Zealand, URS New Zealand and Palliser Estate responsibility for environmental management was assigned to existing company positions. The Warehouse and Waste Management New Zealand created new positions at the executive level. In all cases, the companies have sent a clear message to stakeholders, clients and staff that the rules are changing, and that corporate culture embraces environmental awareness.

## Key Area 3 – Foster New Ideas

### In brief:

- The Warehouse is supporting research into the development of a plastic timber made from mixed grade, post-consumer plastics.
- Watercare Services is undertaking feasibility studies for reusing highly treated wastewater effluent in industrial applications.
- Port of Tauranga exchanges ideas with other Bay of Plenty businesses through “Businesses for a Better Bay” – a social and environmental sustainability business group.



The Warehouse is committed to Zero Waste in all stores by August 2002

“Fostering new ideas is about the creation of mechanisms to develop and test new management, technical and financial solutions.”

### THE WAREHOUSE LTD

We do not currently have all the necessary solutions to solve all the waste issues. The Warehouse has been sourcing ideas from the Tindall Foundation and the Zero Waste New Zealand Trust since 1998. The Warehouse recognises that research and development to support the growing recycling industry are essential, particularly in areas which directly affect the profitability of the company's recycling activities. Mixed grade plastics are a large source of waste for The Warehouse, and there are no existing suitable recycling markets for them. Two years ago, The Warehouse began work with the Tindall Foundation and Sustainable New Zealand to explore the possibility of a plastic timber pilot plant in New Zealand. Similar plants operate in Europe and Australia, manufacturing a timber substitute from mixed grade, post-consumer plastic. The plastic timber can replace regular timber in most situations, and has the added benefit

of being more durable and not needing treatment. This makes it an ideal alternative for vineyard stakes, sea bollards, wharves and park structures. A pilot plant in Glenfield, Auckland should be ready for operation in the next 12 months and, in the meantime, The Warehouse is stockpiling all its plastics that currently do not have a market.

### WATERCARE SERVICES LTD

Watercare Service Ltd continues to invest in research aimed at developing new markets and solutions for resource recovery. Staff continuously explore international leading practice, and collaborate locally with other New Zealand wastewater businesses to exchange ideas and improve environmental performance. Diverting biosolids from municipal landfill is a major priority for Watercare. Watercare is also undertaking feasibility studies for reusing highly treated effluent in industrial applications, and for reusing biosolids.

### Checklist

#### Key area 3

- Engage employees in a waste awareness survey.
- Organise a Zero Waste educational course for staff.
- Initiate a waste reduction pilot project in-house.
- Support waste reduction research.
- Join a business group dedicated to sustainability (refer to the Resources section).
- Network with other companies participating in the NZBCSD Zero Waste project.
- Select an employee to be the company's waste minimisation officer.
- Reward innovative employee ideas.

**PORT OF TAURANGA LTD**

Port of Tauranga Ltd has established a Business for Social Responsibility working group, composed of enthusiastic employees. The group has acted on both personal and corporate objectives, developing creative ideas for improving the local environment. Activities include a beach and

neighbourhood rubbish clean-up every six weeks, implementation of office recycling and composting systems, and regular reporting to the company to stimulate further initiatives. The Port is also a member of “Businesses for a Better Bay”, a social and environmental sustainability business group in the Bay of Plenty area, which provides a forum for exchanging information and ideas.

*“As we search for new ways to control our impact on the world’s environment it is important to set ourselves demanding targets. While at first sight the goal of zero emissions... may seem beyond our reach, I believe it has importance in focusing our quest for solutions to a complex problem.”*

RODNEY CHASE, DEPUTY GROUP CHIEF EXECUTIVE, BP INTERNATIONAL



The Port of Tauranga is active in protecting the Bay of Plenty’s environment

**Common initiatives**

A business’s employees are its greatest asset and best source of ideas.

The Warehouse, URS New Zealand and Port of Tauranga have used internal staff questionnaires and surveys to gauge effectively the level of employees’ environmental awareness and concern, and to solicit ideas for minimising the companies’ environmental impacts through waste reduction.

Undertaking a staff survey is a simple initiative for fostering new ideas and generating a sense of corporate ownership for a Zero Waste programme; if the idea comes from within the business, it is more likely to be accepted and acted upon. The questionnaires and surveys mentioned above have ranged from asking general questions about environmental concerns to asking specifically whether staff would participate in various recycling schemes. 3M New Zealand has taken the concept a step further and engaged in an interactive strategic planning process with all employees to develop a vision for the company until 2003, incorporating a strong environmental element.

## Key Area 4 – Communicate and Educate

### In brief:

- The Warehouse has a team dedicated to educating staff throughout New Zealand about its Zero Waste programme.
- URS New Zealand's Auckland office waste representative personally introduced each employee to the new office recycling system.
- Palliser Estate Wines of Martinborough communicates its environmental progress to customers through updates prominently displayed in the sales area.
- Living Earth uses creative marketing to help its rural and domestic customers see value in organic waste.

### Checklist

- Provide staff, clients, customers and shareholders with the company's Zero Waste policy and reasons for embarking on the Zero Waste journey.
- Communicate regularly with staff, suppliers, clients and shareholders regarding waste reduction progress and issues, through newsletters, e-mail, and meetings.
- Make waste reduction and sustainability a core element of staff training and induction programmes.



Palliser Estate wine is packed in cartons made from recycled fibre

“Communication and education involve informing the staff and stakeholders of the issues, providing opportunity for input and participation.”

#### THE WAREHOUSE LTD

A dedicated project team is responsible for developing The Warehouse's Zero Waste programme for all stores. The programme follows the Zero Waste policy, and includes setting up signage, recycling bins, monitoring systems and staff training. Educating staff in the correct handling of various waste streams for separation and recycling is essential to achieve the Zero Waste target. Sustainability is one of the “core competencies” addressed during initial staff training.

#### URS NEW ZEALAND LTD

In addition to company-wide e-mails and newsletter articles explaining the new office waste reduction system, URS New Zealand took a personal, direct approach to informing and achieving support for change from staff. In the Auckland office, the waste minimisation representative met with each employee to deliver their personal paper recycling box and to explain the purpose and importance of the new system. Receiving instructions and information from a colleague encouraged staff to participate, and provided each person with a point of contact for any queries or suggestions. Regular feedback is provided to keep up momentum and recognise achievements to date.

*“I believe Watercare's commitment to the environment has affected the whole culture of the company, and certainly every employee knows about it.”*

MARK FORD, CHIEF EXECUTIVE, WATERCARE SERVICES

**PALLISER ESTATE WINES OF MARTINBOROUGH LTD**

Palliser Estate actively communicates its environmental initiatives to both staff and customers. Staff training incorporates education on the waste minimisation systems in place in the company. In the wine tasting cellar a list of environmental initiatives, including waste reduction projects, is mounted in a prominent position with the title: “Here at Palliser Estate we are proud to be an environmentally aware business”. The list also provides visitors with several suggestions on how they can increase their own environmental awareness, such as recycling corks, bottles and cartons.

**LIVING EARTH LTD**

The key to sustainable waste recovery is seeing value in a resource that others see as waste.

At Living Earth a critically important principle is its focus on quality of finished product and its commitment to marketing, both aimed at sustaining customer demand.

The company’s technical staff work with the marketing team to develop standards of product quality for Living Earth and for the industry in general.

For its rural customers the company undertakes field trials with CRIs like Landcare Research Manaaki Whenua and ESR to monitor crop growth and contamination impacts in compost usage. A key message in the company’s marketing is the value of compost in soil health and sustainable land management. For its domestic market, Living Earth has been a long-time sponsor of TVNZ’s popular Maggie’s Garden Show.

**Common initiatives**

Communication is the key to ensuring employee buy-in to environmental initiatives.

In-house communication in the form of newsletters, meetings and an intranet site can provide fundamental information and education regarding the Zero Waste programme. Employee ownership of waste reduction systems and concepts is increased through regular, informative communication. 3M NewZealand, Port of Tauranga and Waste Management New Zealand keep staff up to date on waste minimisation and environmental initiatives through newsletters and meetings. The Warehouse also uses a monthly video, sent to each store, highlighting environmental aspects of new products and promoting the Zero Waste goal.

*“Staff have a very direct interest in making sure the garden waste streams are clean. As a company we have an inherent sense of stewardship towards the environment.”*

ROB FENWICK, DIRECTOR, LIVING EARTH



George Fietje (right) and Rob Fenwick discuss biosolid trials in the Living Earth greenhouse

## Key Area 5 – Monitor and Feedback

### In brief:

- The Warehouse stores undertake daily quality checks of their source-separated materials in order to maintain a quality product for recycling markets.
- 3M New Zealand continuously monitors waste generation and reports quarterly to ensure that waste reduction targets are being met.
- URS New Zealand conducts regular in-house waste audits to gauge the improvement in its waste minimisation programme.

### Checklist

#### Key area 5

- Collect and analyse waste audit data.
- Request reports from waste disposal contractors regarding quantity and quality of wastes generated.
- Conduct regular quality checks of recycling receptacles and waste bins.
- Report periodically on waste audit results.
- Incorporate waste minimisation in annual environmental and triple bottom line reports.
- Establish a mechanism for receiving and replying to feedback from stakeholders on the company's Zero Waste progress.
- Regularly re-evaluate and reset targets in response to progress.

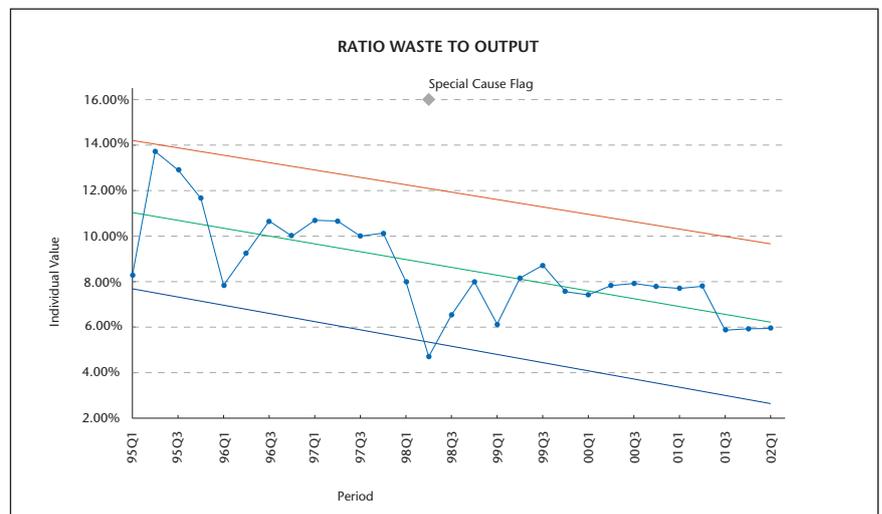
“Monitoring and feedback include assessing and reporting on waste stream characteristics and the success (or not) of Zero Waste initiatives.”

#### THE WAREHOUSE LTD

Correct separation of wastes is a crucial step in The Warehouse's move to Zero Waste. Secondary markets demand high-quality, sorted materials, and any contamination reduces marketability. Each store has a “Zero Waste champion” who is responsible for ongoing education and system monitoring in-store. Information collected from the recycling centres is used to publish a monthly sortation rankings report that rates stores against each other on their ability to sort waste. This generates friendly competition and raises awareness. Overall company progress is reported annually in a triple bottom line report.

#### 3M NEW ZEALAND LTD

3M New Zealand engages in extensive monitoring of wastes generated and reports the results quarterly. Figures are reported as a ratio of waste to good output, and allow 3M New Zealand to determine whether the company is meeting its waste reduction target. Graphic presentation of figures facilitates interpretation and enables trends to be detected. The Environmental, Health and Safety Operating Group, led by 3M New Zealand's Environment Manager, presents the quarterly report at Leadership Team meetings for discussion and feedback.



A quarterly waste report from 3M New Zealand shows a steady decrease in waste

**URS NEW ZEALAND LTD**

To gauge the success of its in-house waste minimisation system, URS New Zealand is committed to performing regular office waste audits. An initial audit was conducted prior to system implementation, and a second audit was completed several months later. The results of the audits show a 40% reduction in waste, by volume, from the URS New Zealand Auckland office, due largely to an improved paper recycling programme and council kerbside collection bins used for glass, plastic bottles and cans. More specifically, 52% less paper and 86% less glass are being sent to landfill. The audits have highlighted the fact that office rubbish bins do not need to be cleared daily by cleaners, especially since most of the waste can be diverted through recycling. Reducing the number of times rubbish bins are emptied by cleaners has also provided cost savings.

**Common initiatives**

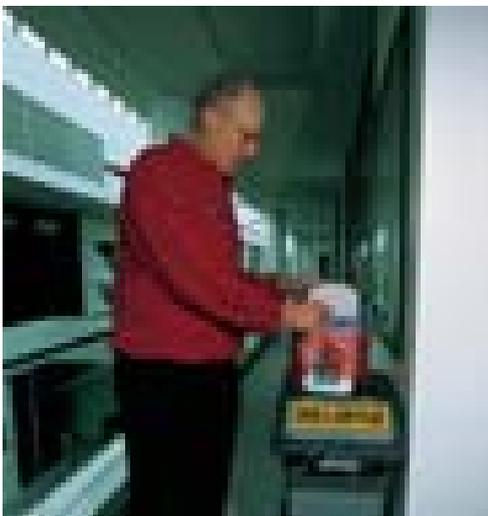
Regular environmental reporting provides a systematic approach to monitoring Zero Waste progress.

The Warehouse, Watercare Services, 3M New Zealand, URS New Zealand, Port of Tauranga, Palliser Estate and Waste Management NZ all engage in annual environmental reporting:

- The Warehouse, Watercare, URS New Zealand, Palliser Estate and Port of Tauranga have adopted sustainable development reporting (SDR);
- Watercare, 3M New Zealand and Palliser Estate follow ISO 14000/14001 monitoring and reporting guidelines (3M New Zealand is not yet ISO 14000 registered);
- Waste Management New Zealand produced its first annual environmental report in 2001, with the annual report for 2002 planned to be in a triple bottom line format; and
- URS New Zealand produced its first SDR report in 2001, which includes an initial baseline for waste management, along with commitments for future improvements.

An annual report provides a focus for ongoing monitoring of Zero Waste projects and targets, and engages stakeholders in feedback on waste reduction progress. Although some companies prepare reports internally, others enlist external auditors or organisations to produce the reports or the reporting systems.

The NZBCSD SDR project report is available at [www.nzbcscd.org.nz/SDR](http://www.nzbcscd.org.nz/SDR).



David Wilson, GM, uses the waste minimisation system at The Warehouse Auckland Support Office



URS New Zealand has improved its office paper recycling programme

## Business Opportunities from Resource Recovery

Resource recovery is big business in New Zealand. In 1998, the recycling industry in Auckland alone was estimated to employ 2,000 people and have a gross annual turnover of at least \$132 million. In 2001, the recycling industry generated \$100 million in export earnings, not much less than those of the flourishing wine industry.

Waste Management New Zealand and Living Earth are both looking to grow the industry even bigger. When New Zealand's largest waste collection and disposal company declared a change in business strategy and a commitment to Zero Waste, heads turned. As part of the change in focus, Waste Management New Zealand acquired 50% of Living Earth, which in 2001 generated 72,000 tonnes of compost. In addition, Waste Management New Zealand collected for recovery 87,000 tonnes of inorganic material (glass, metal, plastic, etc) that would otherwise have gone to landfill.

Waste Management New Zealand decided that its business direction needed to change from its traditional "haul and bury" strategy to one that meets the needs of the new waste minimisation and resource recovery agenda. The company has seen that the future lies with helping its customers to "unbundle" their waste streams and to recover these secondary materials for beneficial use. This is being achieved by assisting clients to identify materials that can be source separated, processed or pretreated, providing the required service, and diverting these materials to resource recovery facilities.

Living Earth has been turning waste into profit for 10 years, and is a recognised leader in New Zealand's Zero Waste movement. The company has specialised in creating high-quality compost from organic materials. Landscape gardeners, wastewater treatment plants, abattoirs and other organic waste producers can now have their wastes recovered for beneficial reuse.

The company's activities have led to the emergence of an estimated \$3 million greenwaste collection sector in Auckland, with several companies now providing greenwaste collection and delivery to Living Earth sites. Living Earth is continually investigating new business opportunities and sees the recovery of household kitchen waste as the next step on the road to Zero Waste.



Living Earth Director Rob Fenwick turns waste into profit



J Pike, Waste Management's Resource Recovery Manager (right) works with B Hay of Progressive Enterprises Ltd to divert supermarket wastes from landfill

An aerial photograph of a green industrial facility, possibly a recycling plant or a sustainable manufacturing site. A white van is parked in the foreground on a paved area. The facility features various structures, including a large green building and a smaller building with a striped roof. The surrounding area is lush with greenery and trees.

# Join the Zero Waste Journey

As the businesses in this Guide have demonstrated, a commitment to Zero Waste is a key expression of the principles of eco-efficiency. Zero Waste means reduced costs, greater efficiency, innovation and the opportunity for enhanced staff and stakeholder relationships. The business case for Zero Waste is compelling.

If your organisation wishes to become part of the NZBCSD's Zero Waste programme, you can do so by taking the following steps:

1. Go to the Zero Waste section on the NZBCSD website:  
[www.nzbcscd.org.nz/zerowaste](http://www.nzbcscd.org.nz/zerowaste)
2. Click on Join the Zero Waste Journey.
3. You should see a form like the one below. Fill out the required fields in the form and click the "Send" button.

You will be sent an e-mail acknowledging receipt of your application. Notice of your application will also be sent to the business you selected to sign up under. It will be your "mentor business" for the project. The web area has a chat facility where you can exchange ideas and experiences with peers from other companies on the Zero Waste journey.

**A "mentor business":**

- Has a valuable Zero Waste journey experience to share;
- Is a resource for an associate business to tap into; and
- Can provide encouragement, support, ideas and contacts.



The next step is to begin the "continuous improvement" process outlined in Steps Towards Zero Waste page 17 of this Guide.

**OTHERS CAN HELP YOU MEET YOUR ZERO WASTE GOAL**

The NZBCSD hopes that, as part of the commitment to Zero Waste, each participating company will encourage its associate businesses, especially suppliers, to adopt Zero Waste and to sign up to the NZBCSD Zero Waste project. Copies of this Guide are available for each participating company to send to other businesses to encourage them to sign up to the programme.

Waste in a business can essentially be reduced at three stages: through materials supplied to the business, during production processes, and during the disposal process. The types of materials entering a business will determine how well waste can be reduced during production and disposal.

For example, if suppliers are providing items in non-recyclable packaging, then that packaging will have to be disposed of at the expense of the business.

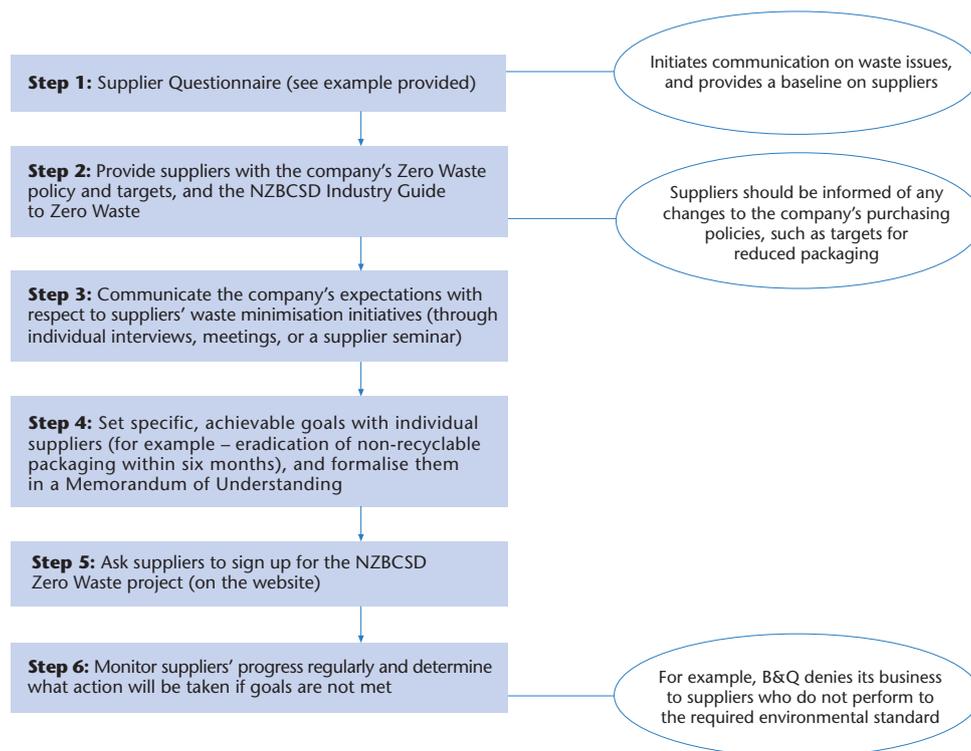
If a business wants to achieve Zero Waste, it must start looking up the supply chain to identify incoming materials that do not comply with its Zero Waste policy. Supply chain agreements are about communicating the business's waste reduction objectives to suppliers, and working together to find practical solutions to minimise resource use and waste.

Several New Zealand businesses, such as The Warehouse, have implemented successful supply chain arrangements. The Warehouse formed an agreement with music CD suppliers to replace non-recyclable polystyrene packaging with a paper substitute. Overseas, B&Q

– the UK's largest chain of home improvement and garden retailers – has been a leader in developing the supply chain concept. The company has an environmental policy and action plan to address supply chain issues. Each supplier is graded on its environmental policy and awareness, environmental action and achievements, working conditions in developing countries, packaging and environmental claims, and use of sustainable timber. Targets for attaining grades are set for suppliers, and if they do not meet the required grade by the target date, their supplier status is reviewed and, possibly, rescinded.

The following model presents a means of monitoring and assessing suppliers on their waste minimisation practices.

**SUGGESTED MODEL FOR SUPPLY CHAIN ZERO WASTE AGREEMENTS:**



## **MODEL QUESTIONNAIRE FOR SUPPLIERS**

Supplier questionnaire to be completed by supply company  
(sample – based on “B&Q Self Assessment Questionnaire for Suppliers”):

### **I SUPPLIER DETAILS**

1. Company name
2. Address of head office
3. Contact details
4. Person completing this questionnaire
5. Date

### **II PRODUCTS INFORMATION**

1. Please describe the products you supply to company X.
2. Please list the raw materials used to make these products.
3. What materials are used to package the products supplied to company X?
4. Please estimate the % of each type of packaging material.
5. Are you aware of any environmental issues caused during manufacture, use or disposal of your products?
6. Are you aware of any environmental issues caused during manufacture, use or disposal of your packaging?
7. Are your products reusable or recyclable? Specify details – which products? which materials? – how can it be recycled in New Zealand – what recyclers collect/process the material?
8. Is your packaging reusable or recyclable? Specify details – which products? which materials? how can it be recycled in New Zealand? what recyclers collect/process the materials?
9. Would you be prepared to investigate alternative packaging options including packaging reduction?
10. Would you be prepared to take back product packaging you have supplied so that it can be reused or recycled?
11. Would you be prepared to take back used product so that it can be re-manufactured or recycled?

### **III WASTE REDUCTION INFORMATION**

1. Do you have an environmental policy or a waste minimisation policy?
2. Do you engage in any “Cleaner Production” initiatives in your industry?

# Resources

## KEY CONTACTS TO GET STARTED

The following organisations can provide information and support to businesses wishing to begin, or continue further along, the journey towards Zero Waste. (Information has kindly been provided by the Auckland Environmental Business Network and the Recycling Operators of New Zealand.)

### Zero Waste New Zealand Trust

PO Box 33 1695, Takapuna, Auckland  
Ph 09 486 0738  
Fax 09 489 3232  
E-mail Mailbox@zerowaste.co.nz  
www.zerowaste.co.nz

Zero Waste New Zealand Trust focuses on three core areas: advocacy and policy development; networking and technology transfer; and funding in order to achieve its goal of encouraging and motivating all sectors of New Zealand society to work towards a target of zero waste to landfill. It will also be able to put you in touch with organisations that can help you implement a Zero Waste programme.

### The New Zealand Business Council for Sustainable Development (NZBCSD)

Level 16, ASB Bank Centre  
135 Albert Street, Auckland  
Ph 09 363 3308  
E-mail office@nzbcscd.org.nz

### BusinessCare

PO Box 11 595, Wellington  
Ph 04 801 9162  
Fax 04 801 9307  
Contact: Peter Crosland  
E-mail Peterc@businesscare.org.nz  
www.businesscare.org.nz

BusinessCare is a charitable trust that supports, assists and encourages local businesses around New Zealand to use more sustainable practices and minimise their wastes. Regional Business Care coordinators are available to assist businesses with their CP programmes.

### Recycling Operators of New Zealand (RONZ)

PO Box 33 183, Takapuna, Auckland  
Ph 09 488 9449  
E-mail Info@ronz.org.nz  
www.ronz.org.nz

RONZ is a non-profit organisation that represents all the diverse interests committed to the common goal of maximising recycling in order to achieve resource conservation, solid waste reduction, environmental protection, energy conservation and social and economic development. RONZ has produced a comprehensive recycling directory, containing contact information for a variety of organisations offering resource recovery services in New Zealand. To obtain a copy, please contact RONZ.

### Ministry for the Environment

PO Box 10 362, Wellington  
Ph 04 917 7400  
Fax 04 917 7521  
www.mfe.govt.nz

### Auckland Environmental Business Network (AEBN)

PO Box 60-575, Titirangi, Auckland  
Ph 09 817 2622  
E-mail office@aebn.pl.net  
www.aebn.pl.net

The AEBN is a non-profit incorporated society and network for Auckland and Northland businesses. Its mission is to assist members on a journey to environmental improvement principally through information, development of new best practice, seminars and workshops, promotional opportunities, and advice. The member list contains a number of consultants who can help with environmental or sustainability advice.

### Business for Social Responsibility (BSR)

Ph 09 634 2510  
E-mail enquiry@bsr.org.nz

BSR is a membership-based organisation established in 1998. Its vision is to advance New Zealand through socially responsible business practice. The guiding principle of BSR is people, planet, and profit, and it keeps members at the cutting edge of national and international socially responsible business best practice.

### Packaging Council of New Zealand

PO Box 76 089, Manukau City  
Ph 09 262 4044

The Council represents manufacturers, fillers, wholesalers, retailers and consumers of packaging and has worked since 1992 to provide a holistic approach to the issue of packaging waste.

**Recovered Materials Enterprise Trust  
(RMET)**

PO Box 33 1695, Takapuna, Auckland  
Ph 09 486 4066  
Fax 09 488 9410  
E-mail [recycloans@pl.net](mailto:recycloans@pl.net)

RMET operates The Recycloans Fund, a loan fund established to support the development of products and markets utilising recovered materials. Its objectives are to achieve waste reduction, job creation and community economic development.

**Environmental Choice New Zealand Trust**

PO Box 56 533, Dominion Road  
Mount Eden, Auckland 1003  
Ph 09 845 3330  
Fax 09 845 3331  
E-mail [info@enviro-choice.org.nz](mailto:info@enviro-choice.org.nz)  
[www.enviro-choice.org.nz](http://www.enviro-choice.org.nz)

Environmental Choice is an environmental labelling programme created to help consumers find products that ease the burden on the environment.

**New Zealand Water and Wastes  
Association Inc**

PO Box 13 880, Onehunga, Auckland  
Ph 09 636 3636  
Fax 09 636 1234  
E-mail [water@nzwwa.org.nz](mailto:water@nzwwa.org.nz)  
[www.nzwwa.org.nz](http://www.nzwwa.org.nz)

The Association is a non-profit, technical and educational organisation that serves its members and the public by promoting environmental responsibility and providing technical and managerial leadership in the fields of water and wastes' management.

**Plastics Institute of New Zealand**

PO Box 76 378, Manukau City  
Ph 09 262 3773  
Fax 09 262 3850  
E-mail [info@plasticsnz.com](mailto:info@plasticsnz.com)  
[www.plasticsnz.com](http://www.plasticsnz.com)

The Institute provides advice to all parties investigating viable recycling operations and collates data. Educates and informs the public on environmental issues and plastics.

**Waste Management Institute  
New Zealand Inc (WasteMINZ)**

PO Box 31 580, Milford, Auckland  
Ph 09 486 6722  
Fax 09 486 3722  
E-mail [wasteminz@xtra.co.nz](mailto:wasteminz@xtra.co.nz)  
[www.wasteminz.co.nz](http://www.wasteminz.co.nz)

WasteMINZ is a multi-disciplinary organisation for anyone involved in the management of all aspects of waste – engineers, scientists, planners, managers, contractors, suppliers, collectors and disposers, business people, and environmentalists.

**Green Globe Asia Pacific Pty Ltd**

GPO Box 371, Canberra ACT 2601, Australia  
Tel 61 2 6257 9102  
E-mail [customer.services@ggasiapacific.com.au](mailto:customer.services@ggasiapacific.com.au)  
[www.ggasiapacific.com.au](http://www.ggasiapacific.com.au)  
Green Globe provides an international certification programme (Green Globe 21) for sustainable travel and tourism.

**ESSENTIAL READING**

"Zero Waste Industry Guide"  
New Zealand Business Council for Sustainable Development

Paul Hawken, "The Ecology of Commerce – How Business can Save the Planet", 1993.  
HarperCollins Publishers

Paul Hawken, Amory Lovins and L. Hunter Lovins  
"Natural Capitalism", 1999, Little, Brown and Company

Robin Murray, "Creating Wealth from Waste", 2001, Demos

Robin Murray, "Zero Waste", 2002, Greenpeace

Ray C Anderson, "Mid-Course Correction – Towards a Sustainable Enterprise: The Interface Model", 1998, The Peregrinilla Press

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