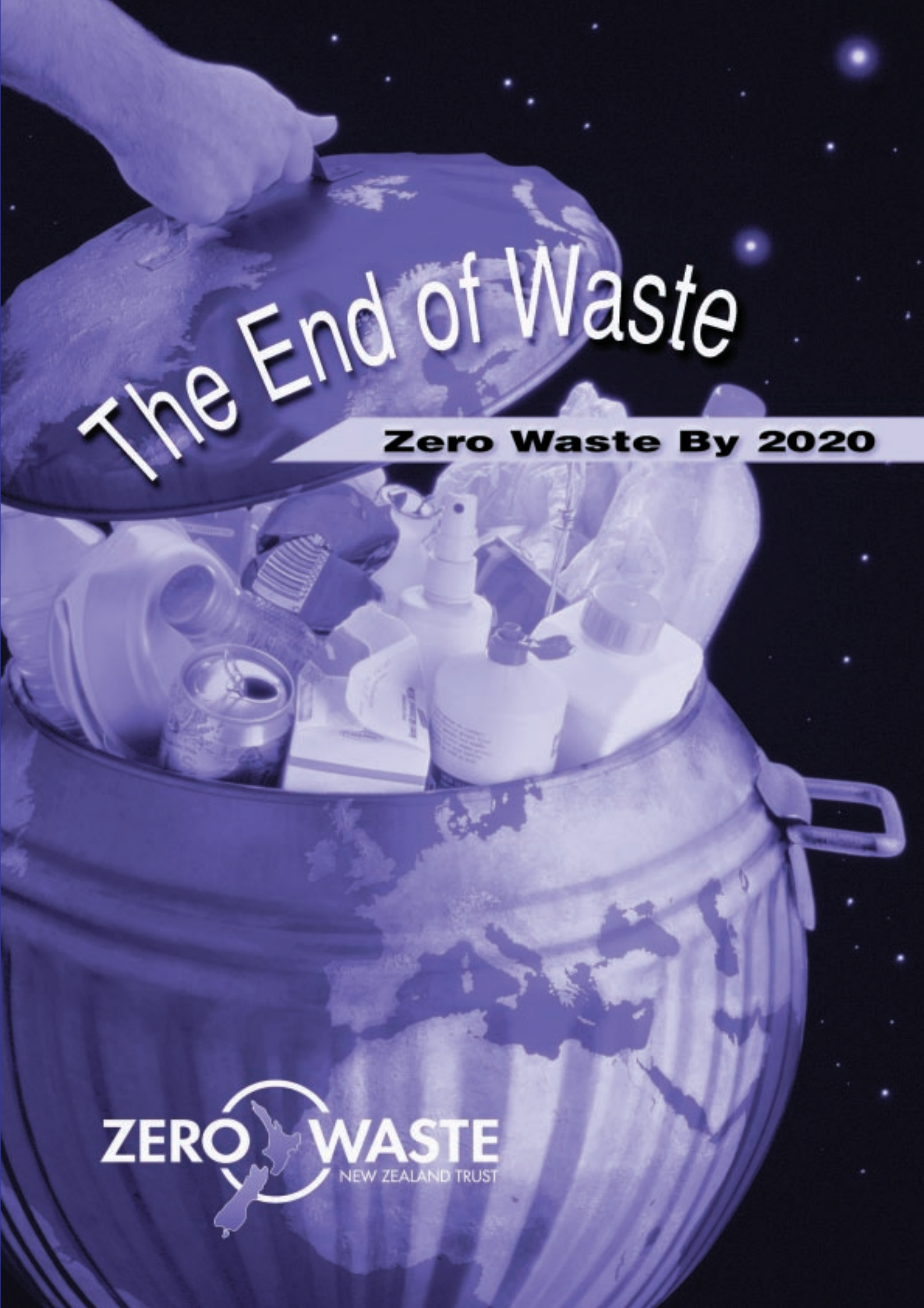
The End of Waste
Zero Waste By 2020
ZERO WASTE
NEW ZEALAND TRUST

INTRODUCTION

All around the world a consensus is emerging that

in the end there is only one safe way to

deal with waste, and that is to eliminate it.

"An End To Waste - Zero Waste by 2020"

is our personal invitation to all New Zealanders

to support the adoption of a national Zero Waste vision:

a vision that will create employment and wealth and

protect precious resources for future generations.

Zero Waste New Zealand Trust

ZERO WASTE
NEW ZEALAND TRUST

THE END OF WASTE

ZERO WASTE BY 2020

A vision for New Zealand

1 *From Waste "Management" to Waste Elimination*

The problem

Communities all around the world are grappling with the waste problem. We are in a crisis of our own making as waste piles up, spreads and contaminates, creating immediate and long term liabilities for future generations. New Zealand, with a population of less than 4 million, is littered with landfills[1] - usually near or on sensitive marine and freshwater systems.

A world crisis

When we consider other worldwide trends, such as increased consumption, increased population and a diminishing resource base, we must conclude that we have a major crisis on our hands.

A threat to our "100 % Pure" image

Our clean environment is our nation's biggest asset - inextricably linked to the success of our export and tourism industries. Current waste handling methods pose serious threats to our reputation as a clean source of food for the world. And cheap waste disposal to landfills (and incinerators) threatens our efficiency and industrial competitiveness.

We cannot lose the battle

There are many communities and even countries with bold and very successful waste diversion initiatives [2]. However, despite these bright spots, worldwide the response to the waste crisis has been a failure as we battle against ever increasing waste volumes.

The idea of "managing" waste isn't working

Increased efficiencies in waste disposal systems and huge vested interests have worked to diminish the feedback and have hidden the crisis. For too long we have put our faith in the idea of "managing" waste but it hasn't solved the problem, and a tragedy is unfolding as the hidden costs of waste accumulate.

We need a breakthrough

A crisis demands action - a breakthrough! And the breakthrough strategy for solving our waste crisis is a very simple one - Zero Waste. Zero Waste is a "whole system" approach to redesigning resource flows comprised of an underpinning philosophy, a clear vision, and a call to action - all based on the notion that we CAN eliminate waste.

2 *The Opportunity*

A One-off Opportunity for New Zealand

Adopting a national Zero Waste policy presents a major opportunity for New Zealand. It's about much more than just waste!

Tourism

A Zero Waste policy will help protect, enhance and build on our "100% Pure" brand, so that we can truly promote ourselves as THE clean, green tourist destination.

Exports

It will be a powerful signal to our overseas markets that New Zealand primary produce comes from an unpolluted environment, without hidden health hazards associated with dioxin and groundwater contamination. The environment is a central component of our GDP and is inextricably linked to our exports. Our markets are dependent on a "clean green" premium that is at best frail. Even the perception of food contamination is a serious threat.

Imports

By recycling the maximum amount of materials we will significantly cut down on primary imports and make sure that those we do import are used to the full.

Global Warming/Climate Change

Landfills are a major source of greenhouse gas emmissions. Large-scale waste elimination will help us meet our Kyoto Summit obligations[3] by reducing CO^2 and methane emissions[4]. No other avenue for reducing these emissions provides such a range of other positive outcomes.

Local Economic Development

Hard-hit communities will be able to take control of a huge untapped, and increasingly valuable resource - to create wealth from waste[5].

Employment

An economic sleeping giant will be awakened through reuse of the vast quantities of separated materials that will come on stream - creating a huge labour market[6]. The recovered-materials industry in New Zealand is already a significant part of the economy[7].

Reduced Liability

Our long-term waste disposal costs will be greatly reduced - and we will take the burden of cleaning up leachate contaminated waterways and polluted beaches from future generations

Knowledge Economy

Experimentation and innovation will flourish in an environment open to new ideas and uninhibited by old-industrial era thinking. The resulting technology will be able to be exported around the world[8].

National Pride

New Zealand will take pride in pioneering an innovative environmental/social policy that becomes established as a global precedent.

Sustainability

Now is the time for New Zealand to take a bold step and become the first country in the world to seriously address sustainability by taking a radical new approach to waste. An achievement of this magnitude would sit well alongside our other 'firsts' such as being the first country to give women the vote and the first to adopt a Nuclear Free policy.

3 *The Solution*

We need to adopt a clear vision that:

1. Has concrete goals
2. Is a single call to action
3. Engages the national psyche
4. Predicts and redesigns the future
5. Creates a climate for continual improvement
6. Out-competes existing waste disposal methods.
7. Creates a new economic model enabling the market to drive the change.

A National Vision of Zero Waste by 2020

By setting a national target of Zero Waste, New Zealand will be the first country to do so, and will gain immense rewards from being at the front of the game. One country will be first - it must be New Zealand!

We are already on the road

As of May 2001, 27 of New Zealand's 74 local authorities have set targets of Zero Waste to landfill by between 2015 and 2020[9] - we are already on the road to Zero Waste.

Rather than settling for just reducing waste through incremental change, New Zealand should aim to eliminate it completely. International leaders in sustainability such as Paul Hawken, Bill McDonough, Robin Murray and Ray Anderson are advocating Zero Waste as a new way of creating economic wealth and addressing a host of other social and environmental problems.

There are more than enough examples[10] around the world showing that businesses and communities can achieve outstanding results by setting ambitious targets - like Zero Waste. A national target of Zero Waste will provide us with immediate and tangible economic, environmental and social benefits.

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" 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 Ltd

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What is Zero Waste?

Zero Waste :

- aims to eliminate rather than "manage" waste.
- is a whole system approach that aims for a massive change in the way materials flow through society - resulting in NO WASTE.
- is both an end of pipe solution which encourages waste diversion through recycling and resource recovery, and a guiding design philosophy for eliminating waste at source and at all points down the supply chain.
- is a unifying concept or "brand" for a basket of existing and emerging technologies aimed at the elimination of waste.
- resets the compass with new tools and new ways of thinking so that normal, everyday activities contribute to the answer rather than the problem.
- is a way to transform the current cost-plus waste industry - whose existence is increasingly dependent on doing more and more for less and less, into a value-added resource recovery industry.
- redesigns the current, one-way industrial system into a circular system modelled on Nature's successful strategies.
- helps communities achieve a local economy that operates efficiently, sustains good jobs, and provides a measure of self-sufficiency.
- maximises recycling, minimises waste, reduces consumption and ensures that products are made to be reused, repaired or recycled back into nature or the marketplace.
- is a powerful new concept that enables us to challenge old ways of thinking and inspires new attitudes and behaviour - the hallmarks of a breakthrough strategy.

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" The goal is zero: zero accidents, zero waste, zero emissions "

Edgar S. Woolard Jr.,
Former Chairman, DuPont

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Is it possible to achieve Zero Waste?

At first, Zero Waste seems impossible. How could we expect to eliminate all waste and, if we could, wouldn't it be prohibitively expensive? Even if we could afford it, where would we start?

Fortunately, Zero Waste isn't something that we need to invent from scratch. After all, it builds on the longest-running, most successful Zero Waste model of all - Nature. Even in our human-made world, many of the building blocks are already in place, with many successful models throughout the world.

Zero Waste is a goal - like the manufacturing goals of Zero Emissions, Zero Accidents and Zero Defects - or like the 'Smoke Free' and 'Nuclear Free' campaign goals. All of these were adopted as 'impossible' targets at the beginning but have since proved their worth by dramatically changing industry and society.

It's important not to get hung up on the zero. No system is 100% efficient. But we know that we can get 'darn close'. By establishing a goal of zero, public and private organizations can focus creativity and resources on getting closer and closer to zero in a journey of continuous improvement which will completely change the way we think about waste. We will have embarked on a whole new 'materials revolution'. Who will not be celebrating our success in 2020 if we are still working on ways to eliminate the final 1% of the waste stream?

Why set a date of 2020 for Zero Waste?

Targets are always more effective when there is a set timeframe within which to achieve them. We have to set a date to be able to engage the nation in a single call to action - one that provides enough time to redesign our systems, legislation and technologies. New systems for materials conservation and recovery will continue to emerge over the next two decades. The reality is that we can easily achieve 80% waste reduction in three to five years, at most, with currently available technologies[11].

Zero Waste is a generational challenge. It has taken 20 years - or a generation, to bring about a change in attitudes to smoking - to the point where it is now anti-social behaviour in almost any context. We are already much further ahead with awareness of the need to recycle. For example, almost every survey in New Zealand and around the world has shown support for recycling to be well over 85%[12].

The history of Zero Waste

In the early '80s a small group of recycling experts started talking about the idea of 'Total Recycling'. "Why not take all of the funds that are allocated to 'wasting' and apply them to resource recovery and recycling. How close to 'total' recycling can we get?" With this approach many believed that any city in the world

could achieve at least 80% reduction in several years. Then a few people started talking about Zero Waste as a vision and goal for society. Canberra became the first city in the world to set a vision of 'No Waste by 2010' in 1996[13] and the Zero Waste movement was born. Since that time the idea of a Zero Waste society has taken off around the world and is becoming a powerful people-led environmental initiative.

As a rallying call Zero Waste has already proven that it has the popular appeal to mobilise communities to action. Over one third of New Zealand's local authorities have now set targets of zero waste to landfill. If ever there was an indication of a groundswell of popular support this is surely an example.

The idea of going for impossible targets has been accepted by business also. It is now common for manufacturers to aim for Zero Defects, when previously it was felt difficult to achieve less than around 5%. Manufacturers now achieve results as low as 1 defect per million and are also aiming for Zero Accidents and Zero Emissions.

Who else is going for Zero?

1. States/municipalities

- Canberra adopted 'No Waste by 2010' in 1996[14]
- Western Australia is in the process of adopting 'Towards Zero Waste by 2020'[15]
- USA - Zero Waste targets have been adopted by Del Norte County, the city of Seattle, Santa Cruz County, San Luis Obispo County, and Boulder City Colorado[16]
- Toronto adopted 'Zero Waste by 2010' in January 2001[17]
- Zero Waste campaigns are also operating in; South Australia, England, Wales, Ireland, India, Egypt, Asia, and the Phillipines[18]

2. Businesses

Major international businesses aiming for Zero Waste include:

- Ricoh Group
- Toyota
- Interface Carpets
- Bell Canada
- Kimberley Clark
- DuPont Inc
- Hewlett-Packard
- Honda Motor Corp
- 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[19]

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" The whole concept of industry's dependence on ever faster once through flow of materials from depletion to pollution is turning from a hallmark of progress into a nagging signal of uncompetitiveness. "

Paul Hawken, Natural Capitalism

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4 Emerging trends in support of Zero Waste

By adopting Zero Waste, New Zealand will be aligning with a number of fast emerging international trends such as:

- Design for the Environment[21]: A new discipline initiated by designers ensuring that all costs, including the environment, are internalised at the design stage.
- Design for Disassembly[22]: Another design discipline aimed at ensuring products are designed for ease of disassembly so that the parts can be reintegrated into new models and materials can be recycled.
- Remanufacturing: Taking parts that have been disassembled and reworking them so that they can be used again for the same or similar purpose (at its simplest, restoring the thread of a screw)
- Factor 4 and Factor 10[23]: Where society aims to get an increase in the amenity or service of a resource by a factor of 4. Factor 10 came soon after and now there is talk of the need to go for much greater increases in resource productivity.
- Cleaner Production[24]: An efficiency concept used mainly by business to reduce the impacts of

production on the environment. Now a common practice right throughout industry worldwide. There are numerous case studies of success stories where significant savings have been made over quite short periods of time.

- De-materialisation[25]: An expression used extensively by Paul Hawken, The Natural Step founder Karl Herick Robert and Amory and Hunter Lovins of the Rocky Mountain Institute to describe the concept of using less materials to create the same service.
- Dynamic Modularity: Where products are made in modules, so that only some modules need to be replaced to lengthen product life (for example the 'skin' of a product)
- Extended Producer Responsibility[26]: Where manufacturers take responsibility for the entire life cycle of products and packaging.
- Reverse Logistics[27]: Where retail chains use their distribution systems in reverse to have all broken and unsaleable merchandise returned to central locations for repair, reuse or breaking down into components for recycling. Retailers report huge economic savings from reverse logistics. Reverse logistics also helps in redesign as manufacturers get better feedback about product failures.
- Selling service rather than product[28]: Most photocopiers, some carpets, some computers and now some washing machines are leased to clients rather than sold. As a result the manufacturer has a vested interest in building higher quality, longer lasting products - thus helping society use less materials.
- The simplicity movement[29]: A fast growing movement aiming to reduce the emphasis of materialism in return for greater quality of life. Over 40 magazines are available in the USA alone extolling and providing tips for living more simply with more time for family hobbies and personal growth rather than the current time deficient, career oriented materialistic lifestyles of the 90s.

Each of these trends is having an impact on, and will dramatically reduce material flows through society. Each will have an effect on the products that we buy and the waste we create. Each is testament to the power of a unifying concept or brand such as Zero Waste.

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"Zero Waste is an extraordinary concept that can lead society, business, and cities to innovative breakthroughs that can save the environment, lives, and money. Through the lens of Zero Waste, an entirely new relationship between humans and systems is envisaged, the only one that can create more security and well being for people while reducing dramatically our impact upon planet earth. The excitement is on two levels: it provides a broad and far-reaching vision, and yet it is practical and applicable today."

Paul Hawken

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5 Who Should Do What

In a Zero Waste Society:

Central Government will take the leadership role, develop legislation to support the Zero Waste target and provide national coordination of key activities, preferably through the setting up of a lead agency. It will create and maintain a level playing field so that environmentally and socially responsible businesses and industries are not disadvantaged. Transitional funds to communities and local authorities to support development, innovation and communication will be provided through economic instruments enacted by the government. It will fund networking and exchanges of experience and information at all levels through all kinds of agencies. As a result it will be able to continue to promote New Zealand to the world as an innovative nation that remains credibly and tangibly clean and green.

Regional Councils will have a major planning role to fulfil. Vision will be required to encompass what the future may hold and need. New reprocessing plant and new bulking facilities must be located. Secondary material flows will need to be carefully anticipated and monitored. There will be many players from all sectors involved and the regional councils will need skills of

coordination and diplomacy as well as those of planning, monitoring and removing bottlenecks to progress in their region.

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“ Zero Waste poses a fundamental challenge to ‘business as usual.’ ... It has the potential to motivate people to change their life styles, demand new products, and insist that corporations and governments behave in new ways. This is a very exciting development. ”

Peter Montague, editor of Rachel’s Environment & Health Weekly

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Local Authorities will guard community ownership of the waste stream, implement legislation and devise further measures which favour material and resource recovery over disposal. Local authorities will enter into partnerships with each other and the community and private sectors, tailoring contracts and structures that provide incentives for waste reduction and diversion from disposal. These partnerships will devise local resource recovery facilities and depots, which will be built or commissioned by local authorities. Community and householder participation will be encouraged as will education and promotion of Zero Waste through schools. Good practice and intelligence in all things pertaining to Zero Waste, from contract design and recovery facility layout through to bin stickers and schools programmes, will be networked and exchanged between authorities with the guidance and support of the Zero Waste Agency.

Industrial Designers have a key part to play in Zero Waste. In the first instance, they will design products that are durable, repairable, easily disassembled for recycling and made of materials that can easily be incorporated back into either nature or into the industrial system. Just as important, they will design these products such that the surplus material and by-products are easily reintegrated or used in the same or other industrial processes and that any unavoidable emissions to water or air are known, measurable and progressively eliminated.

Manufacturers will invest in new design. They will create products with minimal waste, reduce packaging to a minimum and take responsibility for both the recycling or reuse of the packaging and for the product for its whole lifecycle through extended producer responsibility.

Retailers will stock products that are recyclable and repairable, encourage their suppliers to use minimal packaging, provide systems for consumers to recycle excess packaging, and vigorously promote products that are environmentally sustainable. They will facilitate extended producer responsibility by moving from retail into both leasing and servicing of products. This will most likely start with vehicles and white goods.

Secondary Materials Handlers will continue to provide high quality services that out-compete waste disposal services. They will drive toward new economies of scale, particularly with reference to use of fossil fuels. They will find and develop new markets for New Zealand‘s high quality secondary resources. Recyclers will form partnerships with the community waste sector and local authorities, working closely and innovatively to recycle even low-return waste streams.

Universities and Schools will teach Zero Waste principles as part of their basic curriculum and have their own recycling systems in place to ensure that students gain first hand experience. Emphasis in the technical field will be placed on refinement and design of systems for reuse or dismantling of goods and packaging. Priority will also be given to developing modules looking at how waste is socially constructed and the behavioural and cultural changes needed to achieve the targets.

Consultants/Engineers will retrain and gain new systems of understanding around waste. They will train in the Zero Waste technologies and systems and exploit this new professional niche, deploying imaginative services and providing inspired proposals that work towards the goal.

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

Robin Murray, Creating Wealth From Waste

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Community Organisations will work with local authority partners, creating sustainable employment opportunities. They will contract to educate and promote local waste reduction and recycling schemes.

They will work closely with recycling companies to exploit niches that will open up as recycling is increasingly seen as a resource for job and business creation. They are a vital but, until recently, untapped resource for waste reduction with over 40 enterprises operating throughout New Zealand[20]

The Householder will be seen as the basic unit in any national strategy because, although household waste often makes up less than 40% of the total waste-stream, it constitutes more than 90% of public consciousness of waste as an issue. Whatever else we may do in our lives, every one of us is a producer of domestic waste. Householders can buy products that are durable, repairable and recyclable, participate in local kerbside and recycling schemes and install recycling systems in workplaces.

6 *Alternative Industrial Systems*

Current Industrial System

- Linear
- Focus on increasing product throughput, creating financial wealth
- Depends on large-scale, centralised, capital-intensive resource extraction industries and waste disposal facilities
- Most products and packaging are used once before destruction in large waste facilities

Public Policies

- Goal is to manage waste
- Subsidies (current and historical) benefit extraction and waste industries

Product Design

- Tendency towards 'tried-and-true' materials, particularly natural resources
- Attention principally on production and sales
- Short product lifespan increases sales

Materials

- Use cheapest materials, without regard for unaccounted ecosystem impacts
- Subsidies for natural resource extraction, below-cost energy and water
- Limited corporate responsibility for environmental impacts
- Considerable waste left

Manufacturing

- Assumption that bigger companies making more products for an ever-expanding market is best
- Focus on end-of-pipe hazard management
- Belief that application of technology will solve problems

Zero Waste Industrial System

- Cyclical
- Focus on increasing service quality and efficiency, maximizing natural, social and financial capital
- Depends on smaller-scale, decentralised, knowledge-intensive businesses
- Most products and packaging are recycled back into commerce or the biosphere

Public Policies

- Goal is to eliminate waste
- Subsidies for wasting eliminated, policies encourage resource conservation and limit resource wasting

Product Design

- Attention to waste minimization, durability, repairability, recyclability, including packaging
- Plan for ultimate disposal, including return systems, recycling processes, collection for reuse
- 'External' costs, including environmental, are critical part of design considerations

Materials

- Use recycled feedstock materials
- Sustainable, minimum-impact sources for necessary natural or agricultural resources
- Non-toxic chemicals and materials
- Minimal waste, with scraps recycled or used in other industrial systems

Manufacturing

- Emphasis on local and regional production, with global information-sharing
- Plan for avoiding pollution and toxics
- Minimal waste, with scraps recycled or used in other industrial systems

Current Industrial System (contd)

- Continually improving efficiency, but still considerable waste produced
- Manufacturers' product responsibility generally stops here, except for unusual safety impacts

Value-Added Businesses

- Converting and production processes often make scrap materials non-recyclable
- Some waste sent back to manufacturers for recycling

Distribution

- Emphasis on long-distance and global distribution

Customers

- Product popularity considered sufficient customer feedback
- Expectation that product should be 'thrown away' after use

Discarded Products

- Waste is 'managed' centralised, capital-intensive technologies
- Most discards are landfilled or incinerated
- Limited amount of energy is generated from incineration and landfill methane gas, but otherwise residual material value is destroyed

Zero Waste Industrial System (contd)

- Design or contract for ultimate disposal of products after consumer use
- Establish influential feedback systems from value-added businesses, distributors, customers
- Re-evaluate manufacturing impacts and most effective product or service to provide

Value-Added Businesses

- Educated by manufacturers about how to avoid contaminating processes
- Educated by manufacturers on quality of recycled products, when necessary
- Send all scraps back to manufacturers for recycling, or to other industrial uses

Distribution

- Emphasis on local and regional distribution

Customers

- Maximise reuse, repair opportunities
- Educated about convenient recycling opportunities, proper source separation
- Have effective feedback mechanisms to manufacturers

Discarded Products

- All products can be dismantled, with materials separated into recyclable streams
- Governments, businesses collect discarded products
- Material Recovery Facilities (MRFs) send materials to repair and reuse businesses or to appropriate recyclers and manufacturers

7 *Getting There: The Road to Zero Waste*

The road to Zero Waste is a journey. We are more and more able to anticipate each turn and twist of the road as new technologies and strategies emerge for eliminating waste at source and recovering resources at the end of the pipeline. However we are only at the beginning of the road, there is still a long journey ahead.

THE VISION: ZERO WASTE BY 2020

The vision is for Zero Waste by 2020, supported by intermediate targets such as 50% by 2003 and 80% by 2005.

THREE CORE PRINCIPLES

There are three core principles that must all be applied to ensure success.

Principle One: End Cheap Waste Disposal

Cheap disposal has helped create a hugely inefficient industrial system that is externalising costs to the environment and future generations. Zero Waste proposes an efficient human economy that exists within the limits of nature. To achieve this we must progressively factor in all costs to create efficiencies and competitiveness that will drive out and eliminate waste.

Principle Two: Design Waste Out of the System

Zero Waste incorporates a basket of technologies for reducing waste at all points along the supply chain, and is at its most powerful as a design principle. The best way to eliminate waste is to design it out from the beginning. We need to create an environment whereby anyone designing a product will first think about the need for that product, and second, how to ensure that no waste is created in it's production, use and final return to the human economy or nature.

Principle Three: Engage the Nation

We need to engage each and every person at a national and community level in our quest for Zero Waste. We must involve every sector of society and unleash the creativity and energy of communities, businesses and institutions in the pursuit of Zero Waste.

THE STRATEGIES FOR ACHIEVING ZERO WASTE

Encompassed by the vision of a Zero Waste society and the three core principles is a basket of technologies and strategies to help move from the old industrial system to the new Zero Waste system. Many involve changing the rules to make wasting more costly and difficult - and waste minimisation, reuse, repair, recycling and composting more attractive.

This document does not attempt to rank the strategies in order of importance or implementation, but simply lists them as a menu of options.

Landfill Fees

Use real cost accounting to increase landfill fees to realistic levels. Introduce a standard minimum national landfill fee.

Landfill Levies[30]

Establish a national landfill levy to fund a Zero Waste agency. These already exist in the UK, New South Wales, Victoria and Christchurch. Use funds to support innovation and community and local authority programmes.

Landfill Bans

Progressively ban toxic materials, and materials for which markets exist or could realistically exist in the future.

Stockpile Resources

Ensure that every landfill or transfer station has sufficient storage space available to stockpile resources until buyers are found. In some cases "mono filling" would be appropriate.

Separate at Source

Establish mandatory wet/dry separation at source.

User fees (Pay as You Throw[31])

Ensure that wherever waste is produced, the waste generator pays the cost of disposal.

Extended Operator Liability

Operators are responsible for long term environmental effects of waste disposal facilities (landfills, incinerators etc)[32].

Extended Producer Responsibility[33]

Create incentives and disincentives that encourage producers to take responsibility for the life-cycle of their products and the components they are made from.

Packaging Levy

Establish a minimum packaging levy on all non-biodegradable and non-reusable packaging.

Deposit Refund Schemes[34]

Also referred to as "bottle bills". A simple mechanism for funding the recycling of food and beverage containers. It also creates meaningful income and employment opportunities.

Advance Disposal Fee

Add a modest up-front fee to the cost of electronic and other big-ticket items such as computers, printers, appliances and vehicles which is redeemed at the end of their lives to help cover recovery, dismantling or recycling.

Minimum Content Standards

Enact legislation requiring minimum recycled content for major consuming industries to stimulate the recovery of materials and help stabilise commodities market.

Resource Recovery Infrastructure

Ensure that every wasting opportunity at home, in the street or in the factory is matched by, or replaced with a resource recovery opportunity. Make resource recovery visible, accessible, and more convenient than other waste disposal options.

Resource Recovery Parks

Establish Resource Recovery Parks at every transfer station or major disposal point. Some will be small staging posts for larger 'Serial Recovery Systems' where repair, reuse and recycling businesses collaborate to extend the life of products and reintegrate them into society or safely into the environment.

Facility Standards/Permits

Create standards for resource recovery and recycling facilities that would be part of specifications for tenders and would also give the public confidence to use these facilities.

Resource Recovery Contracts

Waste contracts need to be rewritten as resource recovery contracts - a good example is the CLEANSTREAM® concept[35] from Wales where contracts are written as total resource recovery contracts based on three clean streams and one residual stream.

Materials Exchanges

Create a network of materials exchanges to enable industry to feed off each other's waste products. There could be one electronic system for the country.

Identify Discards

Identify all categories of discards (eg the 12 master categories[36]) and design systems for their recovery.

Recycling Targets for Businesses

Challenge business to excel in recycling through mandatory recycling targets.

R&D Grants/Tax Incentives

Provide support for industry to use recycled materials in new and existing products through R&D grants and tax incentives.

Branding Systems for Zero Waste Businesses

Develop criteria for Zero Waste businesses which, if meeting the set criteria, would be able to display a nationally recognised brand.

Mandatory Corporate Environmental Reporting

Ensure that all businesses produce waste plans and report on their progress towards targets.

Imports

Ensure that same criteria are applied to imported goods and locally manufactured goods in terms of recyclability, labelling etc.

Deconstruction Standards

Create guidelines and standards for deconstruction of buildings to ensure maximum capture of reusable materials.

DFE (Design for the Environment) Assistance

Provide grants, loans for research and development of DFE.

Invest in Jobs Through Reuse and Recycling

Use the resources of Ministry for Economic Development and Labour Department etc. to coordinate technical and financial support for the new cyclical economy.

Low Interest Loan Fund[37]

Establish a low interest loan fund for businesses developing systems and new uses for recovered materials.

Grants Programme[38]

Provide funding for start-up projects and community education initiatives.

Community Education Programmes

Develop community education campaigns that help everyone to participate, supported by a national campaign to ensure consistency.

National School Education Programme

Develop resources for schools that integrate into the national Zero Waste campaign.

Training and Research

Support the establishment of a Zero Waste Institute[39] to train and certify Zero Waste advisors, design and trial new technologies, and research new materials and processes

Green Procurement Guidelines/Regulations

Develop green procurement guidelines for the public sector, businesses, councils and organisations, including minimum content guidelines.

Zero Waste Advisors

Encourage the establishment of a network of Zero Waste advisors to assist Councils, businesses and community groups with their projects.

Apply Precautionary Principle

Set a moratorium on the construction of any new waste disposal technologies such as Waste to Energy

incineration plants until experts unanimously agree on their safety.

Measurement and Monitoring

Implement national measuring and monitoring systems New Zealand wide to enable measurement and management of progress towards targets.

Community Ownership of the Waste Stream

Give private and non-profit enterprises in the recycling and resource recovery industry access to the wasted resource stream.

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"Wasting resources wastes jobs because it removes resources from commerce."

Dan Knapp, Urban Ore

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8 The Vehicle for Change

Leadership - A Zero Waste Agency

The key to getting to Zero Waste is leadership. Central Government should give this responsibility to a new Zero Waste agency, which would provide the coordination and transitional funds to 'animate' the change, so that the vision takes on a life of its own. As Robin Murray puts it, " any profound change needs an entrepreneurial force to drive it"[39]. However, we must not wait until an agency is set up to take action.

In a similar way to the Western Australian Government's WAste 2020 Task Force recommendation[40], the lead agency needs to be "independent, integrative and facilitory", and have strong links to other government departments affected by a Zero Waste policy such as Economic Development, Tourism, Employment, Local Government and Health. The agency itself should be comprised of waste minimisation experts (as opposed to waste management experts) representing all key industry and community sectors.

Although Zero Waste New Zealand Trust would not want to take on this role, it would be available to act in an advisory capacity and/or as a participating member.

Funding

In the same way that the Smoke Free campaign has required significant funding in order to change the habits of the nation, the Zero Waste campaign will require funding. The long term savings and economic benefits from the Zero Waste campaign will eventually dwarf this initial investment. However funds must be made available to ensure success.

Implementation Strategy

The lead agency would need to develop an implementation strategy addressing the three key principles of the Zero Waste vision. Dunedin City Council is currently developing a small scale version for Zero Waste Councils in conjunction with Waste Not Ltd and Meritec[41] which could be a good basis on which to develop a national implementation strategy. One of the first functions of the lead agency will be setting achievable intermediate targets.

Keeping on Track

Rapid and accurate monitoring systems will be required to assess what waste is being produced, its composition and its source. This information needs to be fed back to the waste producer and to the community at large in a feedback loop. Feedback on the achievement of intermediate targets also needs to be made highly visible - at both local and national level.

THE ROAD TO ZERO WASTE

9 Summary

As the world struggles to embrace sustainability, New Zealand can lead the way by adopting a Zero Waste vision.

What New Zealand Can Do

1. **Adopt a national vision of Zero Waste by 2020.**
2. **Adopt intermediate targets, such as 50% waste reduction within 3 years and 80% within 5 years.**
3. **Establish a Zero Waste Agency to drive the change.**

What You Can Do

Now it is up to you. If you are in agreement with this call to action, ask your local council to adopt a Zero Waste vision and join the growing number of Zero Waste communities.

For supplementary information visit the Zero Waste website www.zerowaste.co.nz or contact Zero Waste New Zealand Trust, phone 09 486 0734, email: mailbox@zerowaste.co.nz

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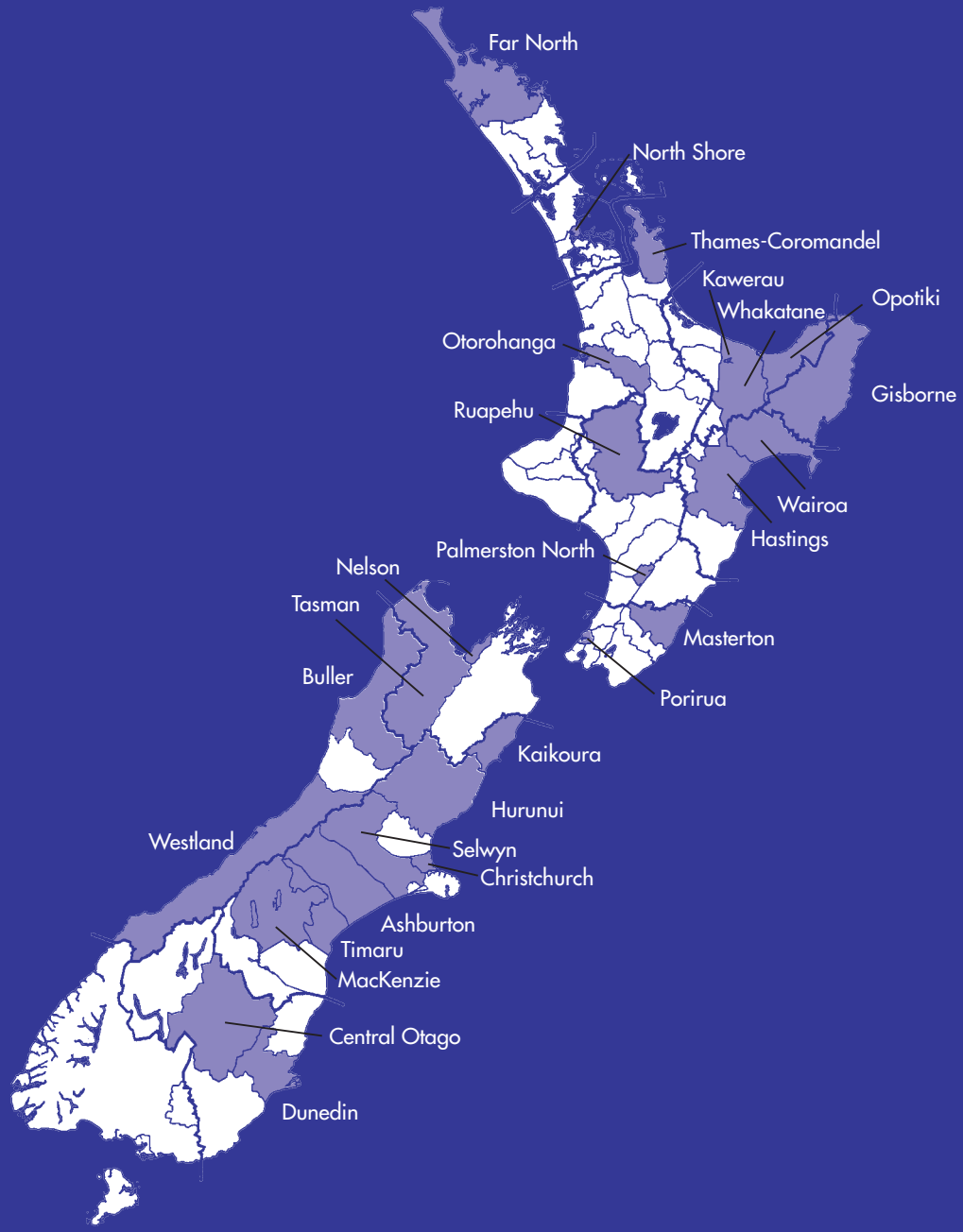
ZERO WASTE COUNCILS (MAY 2001)



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