State of the Nation Report

Landfilling Practices and Regulation in New Zealand

Contents

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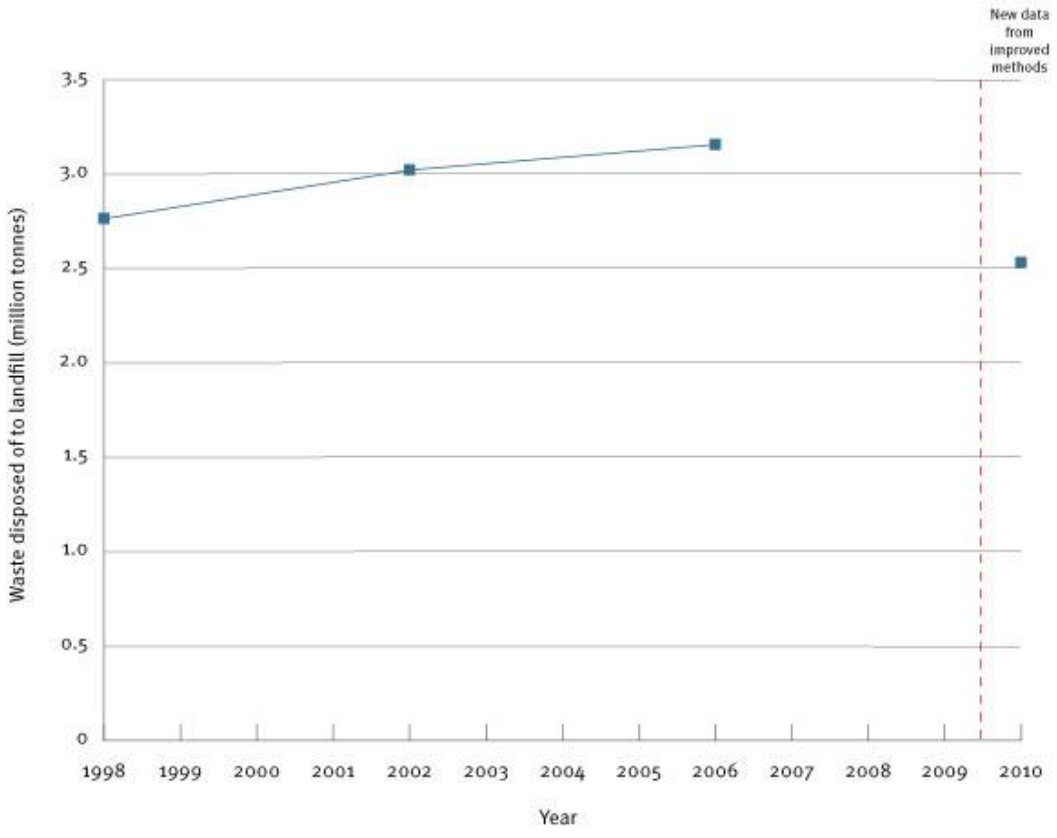
NEW ZEALAND

1. Summary of Solid Waste Management Sector

The household waste generation per capita in New Zealand is estimated to be around 560 kg/inhabitant/year. Around 85% of municipal waste is landfilled in New Zealand[1]. In 2010, 2.531 million tonnes of solid waste was disposed of in municipal landfills in New Zealand[2]. The amount of solid waste disposed of in municipal landfills, that was recorded during the previous 8 years was higher, this may indicate:

- More waste is being diverted from these municipal landfills (see figure below)
- More accurate reporting of the waste disposed, or
- Less waste is being generated

Waste disposed in Landfills



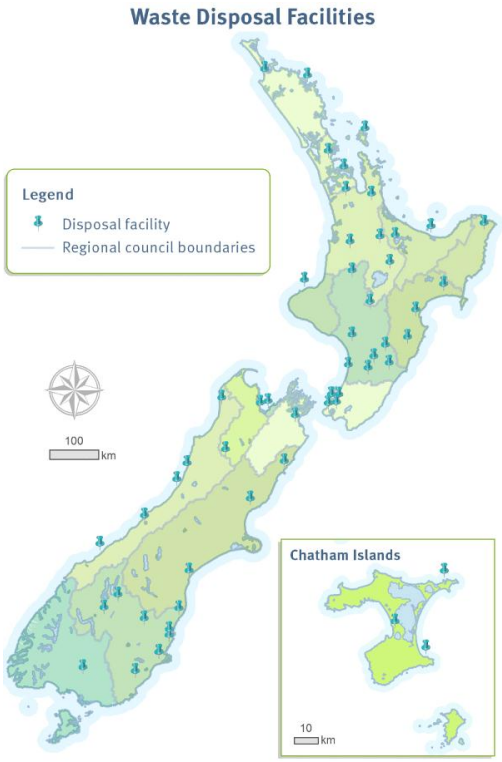
Source: Ministry of Environment, 2011

[1] From Waste to Resource: World Waste Survey 2009

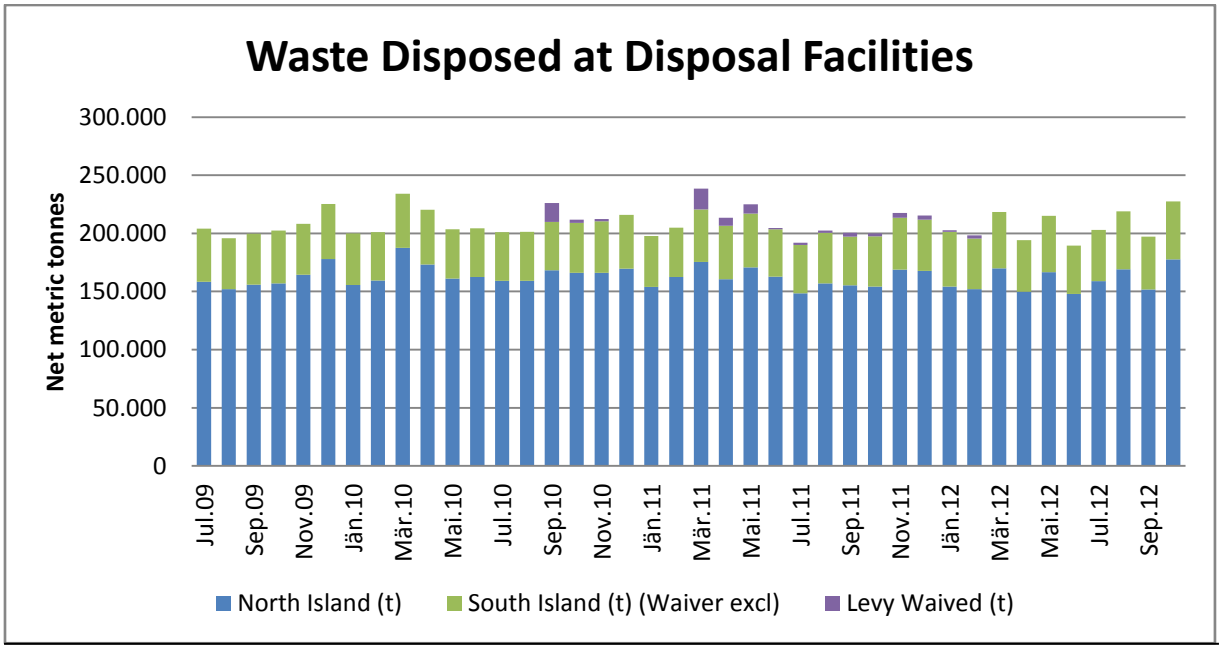
[2] Environmental Snapshot July 2011; INFO 610

New Zealand collects waste information (tonnes disposed) from facilities that have responsibilities under the Waste Minimisation Act 2008; that is facilities that accept household waste and operate at least in part as a business. The majority of waste material that ends up in landfill is generated by commercial activity and industry. In the Auckland region it is estimated that about 85% of landfilled waste comes from these sources. Unlike municipal solid waste, commercial and industry waste is controlled almost entirely by private waste companies.

There are approximately 52 municipal landfills that accept household waste in New Zealand spread across the North, South and Chatham Islands. There has been a significant closure and upgrading of landfills in the past 10 years, in 2002 there were 115 landfills operating across New Zealand.



Source: Ministry of Environment, 2012



Source: Ministry of Environment, 2012

Landfill Classification[3]

The landfill classification system divides landfills into two classes, with different levels of environmental protection and minimum requirements for each class, covering siting, design and operational characteristics. The two classes are as follows:

Class A landfills meet, or are consistent with, the site selection and design standards outlined in the Centre for Advanced Engineering's *Landfill Guidelines* (2000). These landfills are sited in areas that reduce the potential for adverse environmental effects, have engineered systems designed to provide a degree of redundancy for leachate containment, and collect landfill leachate and landfill gas.

Class B landfills are existing landfills that do not meet the site selection and design standards outlined in the Centre for Advanced Engineering's *Landfill Guidelines* (2000) and are consented to accept general domestic and commercial waste. These landfills have limited or no engineered systems designed to collect landfill leachate or gases, and may be in areas that pose a risk to the environment (e.g. sited over highly permeable sands and/or gravels, active faults, or floodplains).

[3] Module 2 – Hazardous Waste Guidelines: Landfill Waste Acceptance Criteria and Landfill Classification: http://www.mfe.govt.nz/publications/waste/haz-waste-guide-module-2-may04/index.html

Waste Composition

Councils were required under the Waste Minimisation Act to undertake a waste assessment by July 2012, and then at intervals of not more than six years after the last review. While many Councils do in fact measure the composition of waste to landfill as part of their waste assessments; there is currently no specific requirement to measure the composition of waste sent to landfill however, the legislation does provide regulation making powers that could require such data in the future (Waste Minimisation Act 2008).

Residential waste collected in Auckland (NZ's largest city) is estimated to contain more than 50 per cent organic material (about 40 per cent of the total being food waste and 10 per cent green waste). It is estimated that up to 30 per cent of the waste Auckland sends to landfill from all sources could be diverted. This material would include organics, timber, metal and plastics. 30% of all waste disposed in landfill is from construction and demolition.

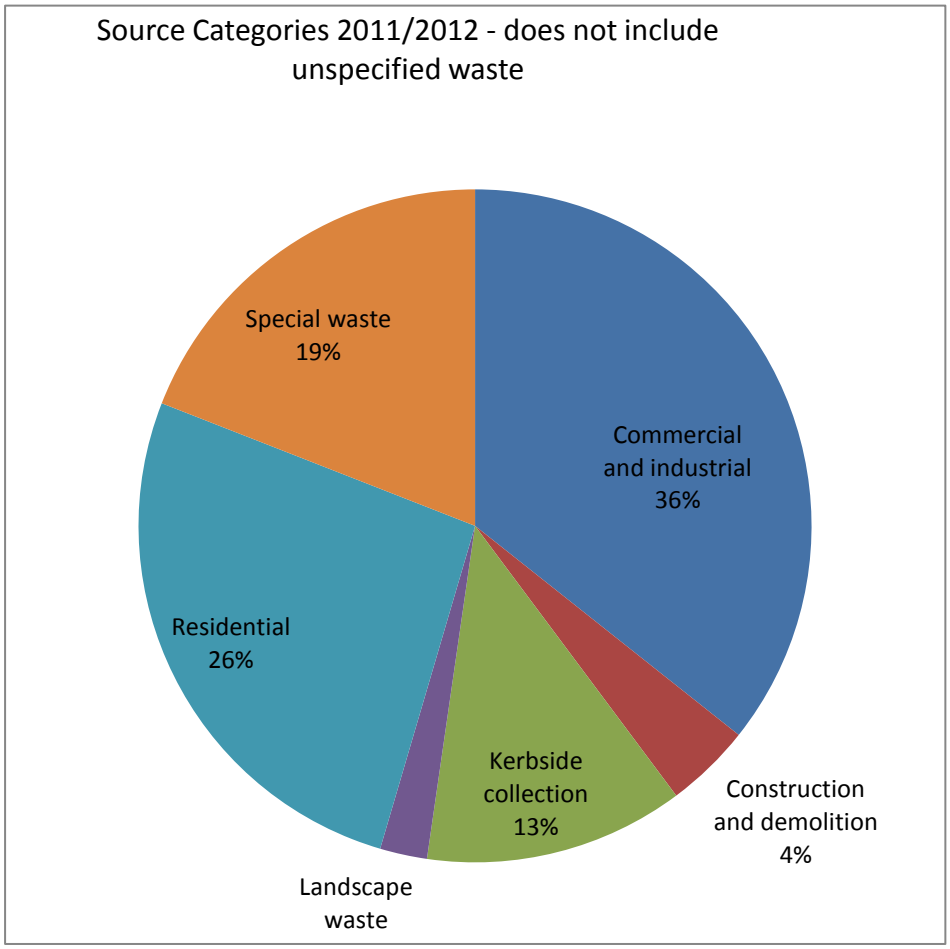
An assessment of waste collected from households in Wellington the capital of New Zealand, gave the following waste composition:

38% Plastic; 28% Paper & Cardboard;19% Putrescibles;7.5% Sanitary; 3% Textiles; 1.5% Glass; 1.3% Ferrous metals; 1.7% Other (rubber, timber, hazardous, electrical, non-ferrous)

Source Categories

A number of facilities have been providing voluntary source category information (see figure below). The source category information has been provided for around 22% of the waste received at disposal facilities.

The Ministry supplied this information, however they recognises this information is not complete as a significant number of facilities have not supplied information. Therefore the Ministry recommends care be taken when interpreting this data.



Source: Ministry of Environment, 2012

Waste in Place

The collection of quality waste data has improved from those facilities covered by the Waste Minimisation Act 2008, due to reporting requirements in the Act.

An inventory for those landfills that accept household waste and operate at least in part as a business in New Zealand is available at:
http://www.mfe.govt.nz/issues/waste/landfills/index.html

2. Overview of Landfill Practices

The Ministry of Environment has developed a series of guidelines for landfill management. NZ landfills need to hold numerous consents under the Resource Management Act (New Zealand's legislative framework for managing environmental effects from activities) in order to operate, such as a discharge permits, water permit and land use consent. The requirements are determined on a case by case basis, for example as a condition for their consent landfills

can apply to use tarpaulins for cover if they wish. The consent process promotes the sustainable management of natural and physical resources and places conditions on the operation of sanitary landfills. Such conditions include waste acceptance criteria, use of daily cover (min 150 mm per day), use of engineered liners, leachate collection and management, surface water monitoring, ground water monitoring, gas monitoring, odour monitoring, mandatory collection of methane gas from operating landfills with a capacity of >1 Million tonnes etc. However prior to 2010, landfills operating with these measures were in the minority according to the 2002 Landfill Review and Audit[4]

3. Key Stakeholders in the solid waste disposal sector relating to Landfill

- Public and private landfill owners
- Waste collection companies
- Recyclers
- Ministry of Environment,
- Regional Councils
- Territorial Authorities
- WasteMinz (National Waste Management Institute of New Zealand)
- Consultants

4. Legal and Policy Frameworks for Landfill

Permits or consents are granted under the Resource Management Act. The main laws that are relevant in NZ are the Resource Management Act, the Waste Minimisation Act 2008 and the Climate Change Response Act (with the Emissions Trading Scheme).

The Waste Minimisation Act 2008 encourages a reduction in the amount of waste generated and disposed of in New Zealand and aims to reduce the environmental harm of waste in order to provide environmental, social, economic and cultural benefits.

The Act has introduced several new tools for managing and minimising waste. The Act provides:

- a $10/ tonne levy on all waste disposed of at municipal landfills to generate funding to help reduce waste
- recognition of product stewardship schemes (through accreditation) and the ability to impose mandatory product stewardship schemes
- clearer responsibilities for territorial authorities in managing and minimising waste.

For further information on the Waste Minimisation Act 2008 and the Waste levy, go to http://www.mfe.govt.nz/issues/waste/waste-minimisation.html

[4] Ministry for Environment (2003) 2002 Landfill Review and Audit: http://www.mfe.govt.nz/publications/waste/landfill-review-and-audit-mar03.pdf

New Zealand has a Climate Change Response Act and is a signatory of the Kyoto Protocol. New Zealand has also recently established an Emissions Trading Scheme which applies to landfills.

Whilst New Zealand aims to minimise waste and the amount that is disposed of, there are no set targets for reducing specific waste streams disposed of to Landfill. Product Stewardship is a non-mandatory (except in the case of identified priority products) industry led scheme to ensure the effective reduction, reuse, recycling or recovery of products. Since 2006, 95% of the population has had access to kerbside recycling or drop of centres, to encourage recycling. There is a conflict between the national waste strategy and practice for waste prevention and recycling as many landfills are owned by private operators who rely on collecting disposal fee based on volume. Most commercial and industrial waste goes directly from where it is collected straight to a landfill without any sorting or material recovery.

5. Domestic Country Strategy

The 2010 New Zealand Waste Strategy (an update of the 2002 version) sets two main goals: 1) reduce the harmful effects of waste and 2) improve the efficiency of resource use. The Waste Minimisation Act 2010 imposes a 10 NZD (plus GST) levy per tonne of waste disposed of to landfill. The collected levy goes toward funding waste minimisation activities. The WMA requires that each Territorial authority is responsible for adopting reviewing and implementing individual waste management and minimisation plans (WMMP).

To help meet international climate change obligations and reduce greenhouse gas emissions New Zealand has established an Emissions Trading Scheme (NZ ETS); which places a carbon price on industries that cause emissions. By the end of March 2013, operators of disposal facilities will be required to report total emissions for the 2012 calendar year. The involvement of Waste disposal facilities in the emissions trading scheme is to ultimately create a financial incentive to offset or reduce emissions.