

## 4 SOLID WASTE MANAGEMENT



### Summary

#### RPS objectives

- To reduce the amount of waste produced and associated disposal needs.
- To ensure that efficient and environmentally sound collection systems are available for the treatment and disposal of wastes.

#### Pressures and state

- The volumes of solid wastes requiring disposal in the region are increasing.
- No major landfills are operating in the region.
- There has been a slight increase in the number of incidents of illegal rubbish dumping and smoke nuisance from backyard burning of rubbish, possibly associated with the introduction of user pays disposal fees.
- Costs of transporting wastes outside the region for disposal are increasing.

#### Doing well

- Increasing awareness of the effects of solid waste disposal has led to better disposal practices.
- All substandard disposal sites have been closed.
- Kerbside collection of recyclable materials is established in both Whangarei and Far North Districts, with substantial increases in the amount being recycled.
- All monitored operational and closed landfills met their resource consent conditions for the last five years.
- The Northland region has met the majority of targets in the New Zealand Waste Strategy where the target date has already been passed.
- Have started the promotion of cleaner production schemes with local industry.

#### Areas for improvement

- Currently there are significant numbers of Northlanders that do not have access to recycling facilities, particularly in the Kaipara District.
- Continue to reduce the quantities of waste going to landfill, by increasing the amount recycled or reused.
- As a region need to continue to work towards the targets in the New Zealand Waste Strategy.
- Reduce the number of incidents of illegal waste dumping and burning.

## 4.1 Introduction

Waste is any material – solid, liquid or gas – that is unwanted and/or unvalued, and discarded or discharged by its owner as defined in ‘*The New Zealand Waste Management Strategy*’ (MFE 2002). This chapter covers solid waste only. Gaseous waste is dealt with in the air quality chapter, hazardous waste in the hazardous wastes chapter and liquid wastes in the surface water quality chapter.

Solid waste includes common household wastes such as paper, plastic, glass, metals and kitchen and garden wastes and industrial and commercial wastes such as construction and demolition materials and organic waste from agriculture and food processing. Most solid waste is disposed of in landfills or cleanfills.

### Waste management issues

The Northland region, like others throughout the country, is producing an increasing amount and variety of waste. The management of this waste has potential for considerable environmental effects. A three-way approach is required to deal with this problem, including the reduction of wastes at source, associated programmes of reuse and recycling, along with improved methods of collecting, treating and disposing of the residual volume.



### Regional Policy Statement objectives

The objectives of the Regional Policy Statement for Northland (NRC 2002) for waste management are:

- To reduce the amount of waste produced and associated disposal needs.
- To ensure that efficient and environmentally sound collection systems are available for the treatment and disposal of wastes.

### Environmental results anticipated

The following is the anticipated environmental results after the implementation of the waste management policies in the Regional Policy Statement (RPS):

- A reduction in the volume of waste requiring disposal.
- A reduction in the frequency and magnitude of unauthorised disposal of waste.
- A reduction in the effects of the authorised waste disposal activities on the environment.

## 4.2 What are the pressures and state of solid waste management in Northland?

This chapter on solid waste management differs slightly from other chapters in this State of the Environment Report, in that obviously solid waste management is not an environment like air, land and coastal are but it is a potential pressure on our environment. Therefore it is clearer to present the **pressures** and **state** of solid waste management together in this section.

### Waste disposal facilities

There are currently three relatively small waste disposal sites operating in the Northland Region at Ahipara and Russell in the Far North District, and Hakaru (near Mangawhai) in the Kaipara District.

Within the Far North District, the closure of the Kaikohe (1999) and Whangae (2000) sites leaves only two operational sites, at Russell and Ahipara. It is likely that the Ahipara landfill will have reached full capacity by mid 2008. The balance of refuse generated within the Far North District is transported to Redvale landfill in Auckland for disposal.

The Kaipara District landfill site at Hakaru accepts refuse from the Mangawhai, Kaiwaka, and Maungaturoto areas, but is expected to close this year after which all refuse will be transported to Redvale landfill in Auckland. The balance of the refuse collected from the Dargaville area is also transported to Redvale.

The Pohe Island landfill in Whangarei ceased accepting refuse in October 2005. Concurrent with the closure of Pohe Island, the Re:Sort transfer station and recovery park commenced operation, accepting solid waste from the Whangarei District for compaction and transfer to Redvale Landfill in Auckland. The cost of transporting this rubbish outside the region is increasing as fuel prices continue to rise.



Re:Sort, the resource recovery park for the Whangarei District.

Northland Regional Council (NRC) has granted resource consent to Whangarei District Council (WDC) for construction and operation of a new landfill site at Puwera, 10km south of Whangarei. It is anticipated that this will not be operational for at least three years.

There is also an unknown number of small farm disposal sites scattered throughout the region. There has also been an increase in the amount of unapproved cleanfill sites operating. While there is no regulatory requirement for formal approval of cleanfill sites, they must comply with the rules in the Regional Water and Soil Plan (RWSP) for Northland (NRC 2007).

## Environmental incidents

A total of 524 incidents of illegally dumped refuse were reported to the NRC between January 1994 and December 2006, including demolition material and offal, as shown in figure 1 (below).

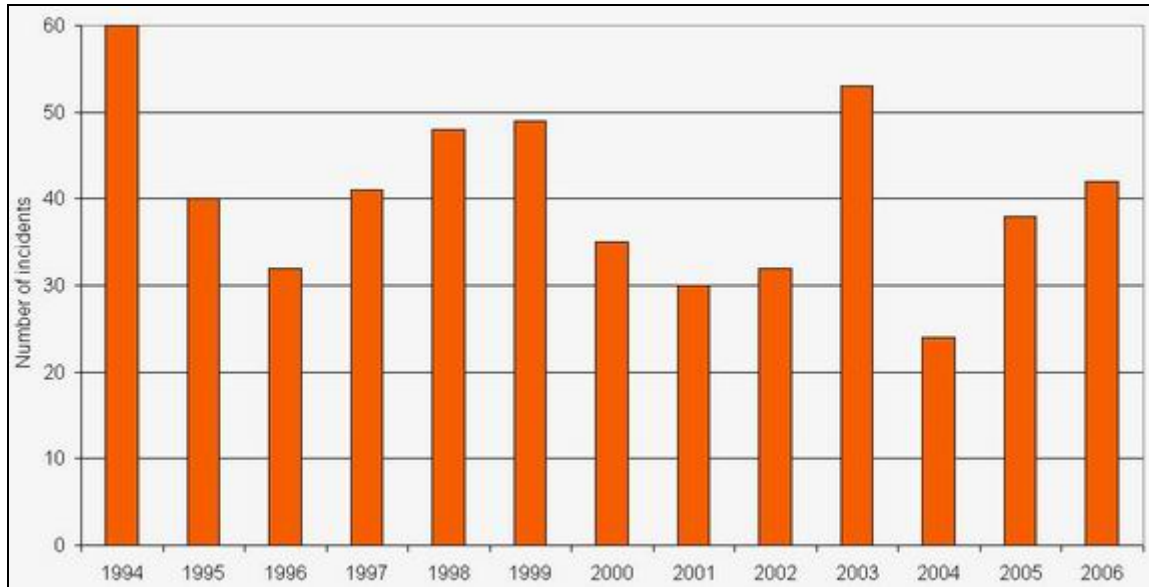


Figure 1: Graph showing number of illegal rubbish and offal dumping incidents in Northland reported to the Council from 1994 to 2006.

A decline in the number of illegal dumping incidents up to 2002 was reported in the last report (NRC 2002b). However there were about 20 more incidents of illegal dumpings recorded in 2003 and there has been a slight increase in incidents between 2004 and 2006. These increases could be associated with the implementation of user pays disposal fees. The majority of these incidents are reported from areas with major urban centres such as Kaitaia, Whangarei and Dargaville.



Illegal refuse dumping incident reported to the Regional Council.

There has also been a significant increase in the number of incidents of smoke nuisance from backyard waste burning reported to the Council from 2003 to 2006. Some of the offenders have claimed to be burning waste to avoid paying disposal fees. For more information refer to the air quality chapter of this report.

## Quantity of waste produced

A summary of waste and recycling quantities from Far North and Whangarei Districts are presented below. Kaipara District Council (KDC) did not have a recycling programme and could not provide accurate data of waste entering landfills at the time this report was



compiled. It is difficult to provide an accurate measure of the total volumes of solid waste produced in the region and therefore caution should be taken when interpreting these results.

### Landfill waste

A summary of the amounts of waste being disposed of to landfill for the Far North and Whangarei Districts for the last two years is presented in figure 2 (below). KDC could not provide accurate data.

Based on the best estimate figures provided by the WDC as shown in the graph below, the total amount of refuse waste that went to landfill in the Whangarei District in the 2005/2006 year was 47,851 tonnes, which is a slight increase from the 1999/2000 figure of 43,843 tonnes (NRC 2002b). However, if you compare this figure to the increase of population in the Whangarei District over this time, the amount of waste to landfill per person per year is the same in 2005/2006 as 1999/2000, at approximately 640 Kg/person.

The total amount of waste to landfill for the Far North District in 2005/2006 was 10,156 tonnes, which equates to 180 Kg/person for the year. This much lower figure per person in the Far North District suggests that a significant proportion of the waste produced in this District is not being disposed of in the main waste stream. It is most likely being disposed of in private sites in rural areas or through incineration.

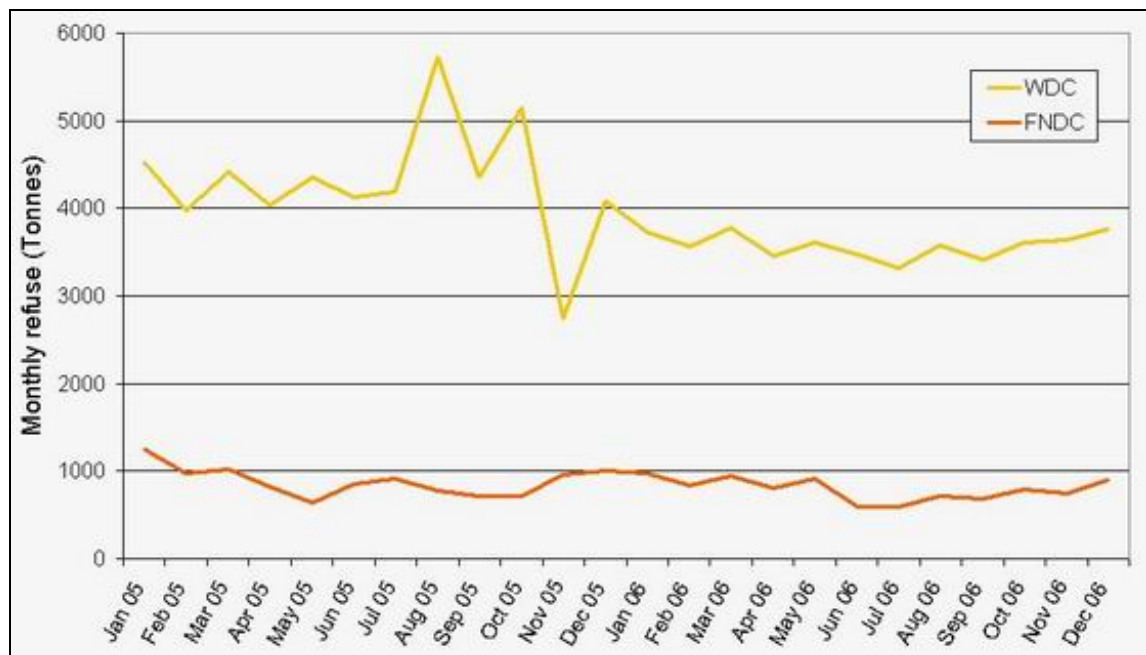


Figure 2: Monthly weight of refuse to landfill for Whangarei and Far North Districts for 2005 and 2006.

There has been a decrease in the total refuse quantities from Whangarei District at the time that user pays was introduced in October 2005. This can be attributed to a number of reasons, and is likely to be a combination of all of the following:

- Increased recycling (although the increase in recycling accounts for only 20% of the decrease in refuse quantities).
- Slight increase in the number of illegal dumping.
- A reduction in the amount of non-regional waste being disposed of in Northland. Due to disposal fees being considerably less in Northland to neighbouring regions

in the past, there have been reports of transportation and disposal of non-regional waste.

- Burning or incineration of domestic rubbish.
- Increased separation of cleanfill material from general refuse and disposal of this cleanfill in situ or locally through privately operated cleanfills. Anecdotal evidence suggests a marked increase in private cleanfill operations.
- Increased on-site disposal in rural areas, as this is a permitted activity (within certain conditions) in the RWSP.

### Recycled waste

A summary of the amounts of waste being recycled for the Far North and Whangarei Districts for the last two years is presented in figure 3 (below). The amount of waste recycled in 2005/2006 was 5,407 tonnes for the Whangarei District and 6,669 tonnes for the Far North District.

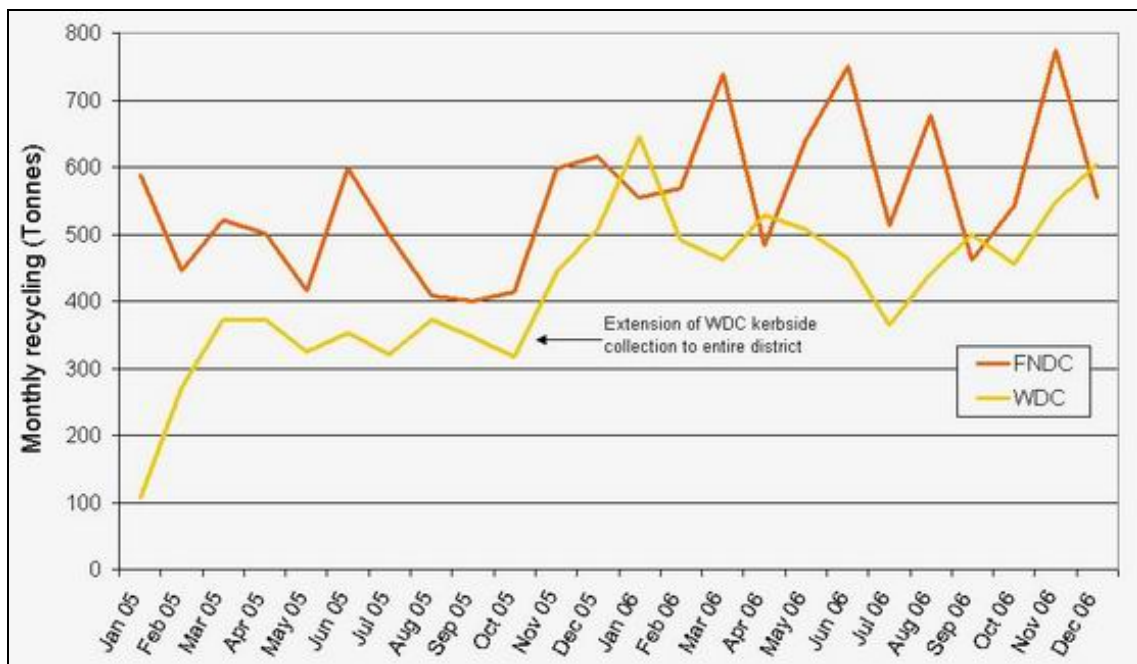


Figure 3: Monthly weight of recycled waste for Far North and Whangarei Districts for 2005 and 2006.

The extension of the kerbside recycling scheme to the entire Whangarei District led to (on average) a 43% increase in monthly tonnages compared to the previous figures.

The greatest proportion of the recycled waste by weight in the Whangarei District is glass at 48% followed by paper at 40% as shown in figure 4 (right).

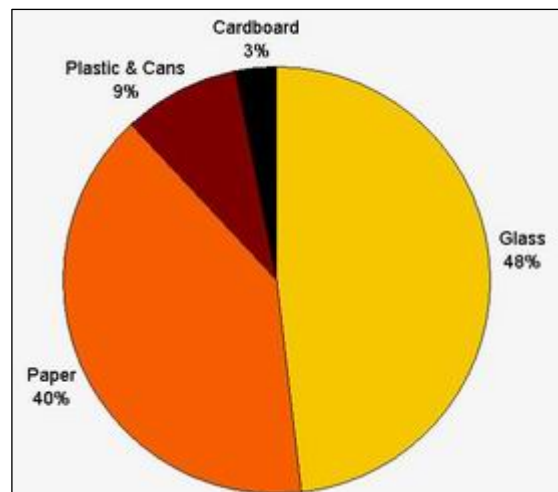


Figure 4: Proportion of recyclables for Whangarei District for Feb 05 to Jun 07 (right).

## Landfill monitoring

The effects that a landfill can have on the environment are not easy to detect. Leachate is produced when water filters downward through a landfill, picking up dissolved materials from the decomposing wastes. Depending on characteristics of the landfill and the wastes it contains, the leachate may be relatively harmless or extremely toxic. Generally leachate has a high biochemical oxygen demand (BOD) and high concentrations of organic carbon, nitrogen, chloride, iron, manganese and phenols. Many other chemicals may be present, including pesticides, solvents and heavy metals.

Modern, sanitary landfills are constructed to prevent leachate contamination of groundwater or surface waters. The bottom of the landfill is lined with impermeable layers, and the leachate is collected and treated before being released to the environment. On the other hand older landfills were constructed without liners, and have high potential for contamination of both surface and groundwater. Comprehensive monitoring programmes are needed so that many of these risks can be identified and action taken to prevent any off-site effects.

Both operational and closed landfills are monitored on a regular basis by the Regional Council. This monitoring shows that both closed and open landfills are having minimal adverse effect on downstream receiving water quality. The samples from landfills monitored over the past five years were all within specified resource consent limits and were not shown to have contributed to any significant contamination of nearby waterways.



Russell landfill.

### 4.3 What is being done?

#### Policy documents

The RPS provides an overview of resource management issues in Northland, including waste management issues. It contains objectives, policies and methods to achieve the integrated and sustainable management of Northland's environment. Solid waste policies focus around waste minimisation and waste collection, treatment and disposal.

Otherwise all landfill or cleanfill sites must comply with the rules in the Regional Water and Soil, Coastal and Air Plans for Northland.

#### Landfill monitoring

Under the Resource Management Act 1991, most of the small and often poorly planned and managed rural tips used throughout the region have closed, and in most cases have been replaced with refuse transfer stations, which have a lesser impact on the environment.

Instead of having a large number of small sites, larger centralised landfills are now used for the disposal of refuse. At present, three landfill sites operate in the Northland Region, Ahipara, Russell and Hakaru.

#### Operational landfills

Operational landfills are monitored either seasonally or twice a year. Surface water, groundwater and sediment samples are collected from locations adjacent to the landfills. These samples are then analysed for a wide range of parameters including general water quality indicators and potential contaminants, such as heavy metals. In addition, organic scans are undertaken annually at some sites on landfill leachate samples, to screen for the possible presence of pesticide residues and other contaminants.

#### Closed landfills

Closed landfills are visually inspected every second year. Also at some sites, samples are collected and analysed for a wide range of water quality indicators and heavy metals.



Whangae closed landfill.

#### The New Zealand Waste Strategy

In 2002, the Government released '*The New Zealand Waste Strategy*' (MFE 2002). The Strategy contains national targets for prioritising wastes. The following targets for solid waste have had a direct impact on Regional, City and District Councils. Tables 1 and 2 below show Northland's progress towards reaching the targets.



Table 1: Targets for solid waste and Northland's progress in April 2007

Target	Target date	Progress
Local authorities will have addressed their funding policy to ensure that full cost recovery can be achieved for all waste treatment and disposal processes.	Dec 2003	Mostly achieved
Operators of all landfills, cleanfills and wastewater treatment plants will have calculated user charges based on the full costs of providing and operating the facilities and established a programme to phase these charges in over a timeframe acceptable to the local community.	Dec 2005	Partially achieved
All cleanfills will comply with guidelines.	Dec 2005	Partially achieved
All substandard landfills will be upgraded or closed.	Dec 2010	Fully achieved
All substandard wastewater treatment facilities will be upgraded, closed or replaced with systems that comply with all relevant regional and coastal plans, standards and guidelines.	Dec 2020	Partially achieved

Table 2: Targets for waste minimisation and Northland's progress in April 2007

Target	Target date	Progress
Local authorities will report their progress on waste minimisation and management in their 2001-02 annual report and quantitatively on an annual basis from then onwards.	Annually	Partially achieved
All regional councils will ensure that new or renewed industrial resource consents include a recognised waste minimisation and management programme and will report on the percentage of all consents under their jurisdiction that have such a clause.	Dec 2005	Partially achieved
At least 10 major businesses will be participating alongside central and local government in developing and promoting waste minimisation programmes within their sector.	Dec 2005	Not achieved
Ninety-five percent of the population will have access to community recycling facilities.	Dec 2005	Partially achieved*
Territorial local authorities will ensure that building regulations incorporate reference to space allocation for appropriate recycling facilities in multi-unit residential and commercial buildings.	Dec 2005	Not achieved
All councils will ensure that procedures for waste minimisation have been addressed for all facilities and assets they manage and will have set target reductions based on public health, environmental and economic factors.	Dec 2005	Partially achieved
All regional councils will ensure that at least 25 percent of all existing industrial resource consent holders have in place a recognised waste minimisation and management programme.	Dec 2010	Some progress

\* This is difficult to quantify, however since the 2002 report a considerable number of recycling facilities have been constructed in the region.

## Other responses

### *Cleaner production*

Northland Regional Council has commenced promotion of cleaner production schemes with local industry. Cleaner production aims to reduce costs by increasing efficiency, minimising raw material use, recycling and reducing waste and preventing pollution. It encompasses everything from the supply and use of raw materials and resources, product design and management techniques through to waste management. Several industry sectors, such as vehicle grooming operations and vehicle dismantlers, have been identified and prioritised. See the case study of cleaner production promotion with vehicle washing businesses below.

#### 4.4 Where to from here?

The following are key areas for future solid waste management in Northland:

- The Regional and District Councils will continue work to meet the targets of 'The New Zealand Waste Strategy'. The emphasis will now be on working with businesses to promote cleaner production and waste minimisation. Until Kaipara District supplies recycling facilities we will not meet the target for 95% of Northlanders having access to recycling facilities.
- The Regional Council will continue to work with industries to promote cleaner production by identifying problem areas and assisting in providing solutions. Vehicle dismantlers and businesses with vehicle washing facilities will be completed by the end of 2007. The next industry to be targeted is boat builders.
- Central and local government will continue to raise public awareness about waste disposal and reducing rubbish, through regional and national campaigns such as the 'reduce your rubbish' campaign (see below for more information).

## 4.5 What can you do to help?

There is a lot you can do in your home, business and school to reduce the amount of waste you produce that enters a landfill. There are three main ways to reduce the amount of waste:

- **Reduce** the amount of waste that you buy. Check whether a broken appliance can be fixed rather than just buying a new one. Buy products with less packaging or more product in relation to the packaging. For example, buy a 2 litre of milk rather than two 1 litres and avoid fruit and vegetables that have excessive packaging.
- **Reuse** as much as you can. For example, use reusable products such as reusable shopping bags (available cheap at supermarkets) instead of plastic bags and use a washable plastic container for sandwiches instead of lunch wrap. Donate containers to local schools and kindergartens for crafts and plant pots to nurseries set up by landcare groups. Use waste paper as scrap/note paper.
- **Recycle** as much as you can. Buy products that are made with recycled materials and/or that are recyclable. Have a compost or worm farm at home for organic material including food scraps and garden waste.

The Government campaign “Reduce your rubbish” has a website with excellent ideas for reducing the amount of waste you produce.

**Check it out:** [www.reducerubbish.govt.nz](http://www.reducerubbish.govt.nz)

A new website developed by the Ministry for the Environment on sustainability, provides basic information on rubbish reduction for households.

**Check it out:** <http://www.sustainability.govt.nz/rubbish/>

### Composting

For more information on composting and worm farming refer to the brochure available on the following page of the Regional Council website or contact any of the council offices:

<http://www.nrc.govt.nz/Resource-Library-Summary/Publications/Waste/Composting-and-Worm-Farming/>

### Silage wrap collection scheme

The Regional Council has also recently started up a silage wrap collection scheme in coordination with other organisations. For more information refer to the following page of the regional council website or contact any of the council offices.

<http://www.nrc.govt.nz/Resource-Library-Summary/Publications/Waste/Silage-wrap-collection/Silage-wrap-collection/>



## 4.6 Case study 1: Pollution prevention for vehicle washing

Northland Regional Council carried out a pollution prevention programme targeting Whangarei businesses whose activities included washing of vehicles. Businesses evaluated included car valets, rental car providers, transport operators, coach operators and car sales.

The primary aim of the programme was to determine which businesses were discharging to stormwater, and to educate those businesses regarding the potential environmental impact of their washing. Other areas covered were use, storage and disposal of hazardous substances (such as solvents, oil and coolant) and any other waste issues identified during the site visits.

### What was done?

A checklist was developed to identify and rank the potential environmental impacts of the washwater discharge. Each business was visited initially and if the environmental risk was deemed low or non-existent then no further visits were required. Those sites identified as having potential for environmental impact through discharge of contaminants to stormwater were informed during the visit of the RWSP rules pertaining to this, and requested to find a viable alternative to their current practices. This was followed up in writing.

Alternatives promoted were as follows:

- Washing with water only was deemed acceptable if vehicles were generally clean (i.e. car yards) or numbers were sufficiently low.
- Discharge to sewer and application for a Trade Waste Consent (TWC) with WDC where appropriate.
- Washing on permeable ground where there was sufficient on-site wastewater retention, allowing time for any detergents used to break down. (This option was only suitable for activities that did not involve washing of oils or other contaminants off vehicles).
- Onsite retention in a holding tank and removal by an approved liquid waste company.

Follow up phone calls and visits to non-compliant businesses were made and are currently ongoing.

### What were the results?

Through the programme 59 businesses were identified and visited. A summary of the initial findings from the first visits is given in Figure 5:

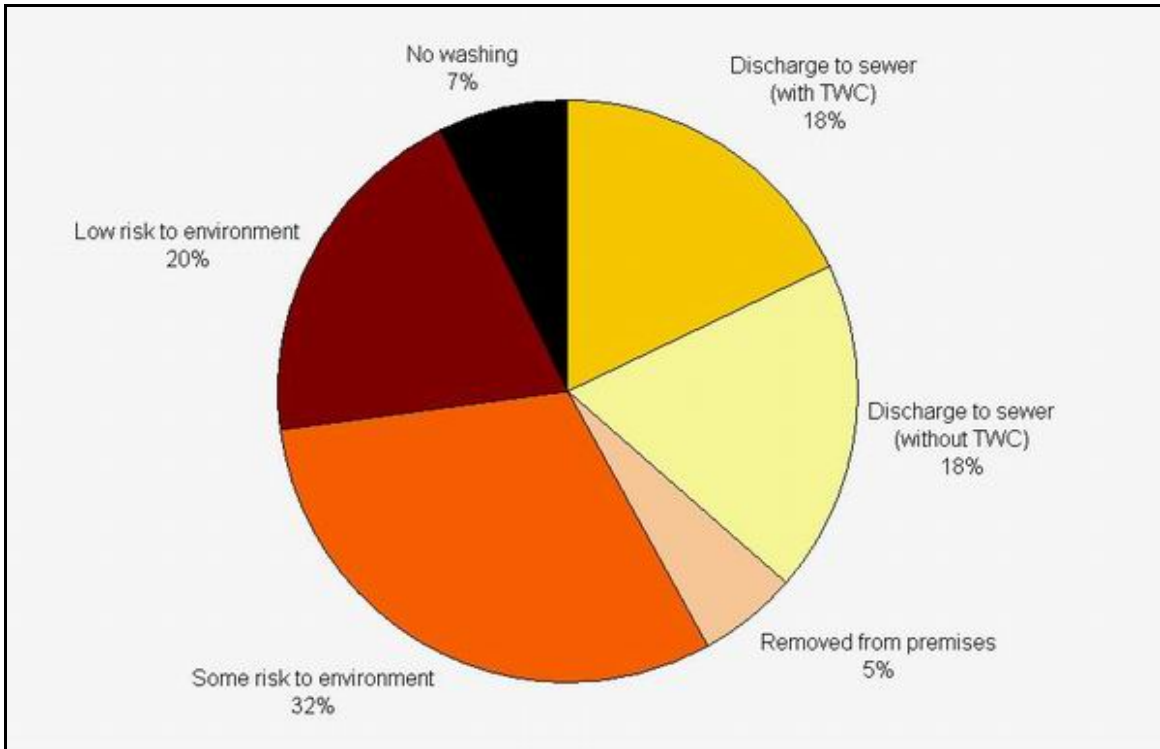


Figure 5: Initial results from visits to 59 businesses.

From figure 5 (above) it can be seen that 32% of the sites have potential to have adverse effects on the environment and therefore were classed as non-compliant. These results are consolidated in figures 6 and 7 (below). Figure 7 shows the changed practice in businesses once notified of their non-compliance.

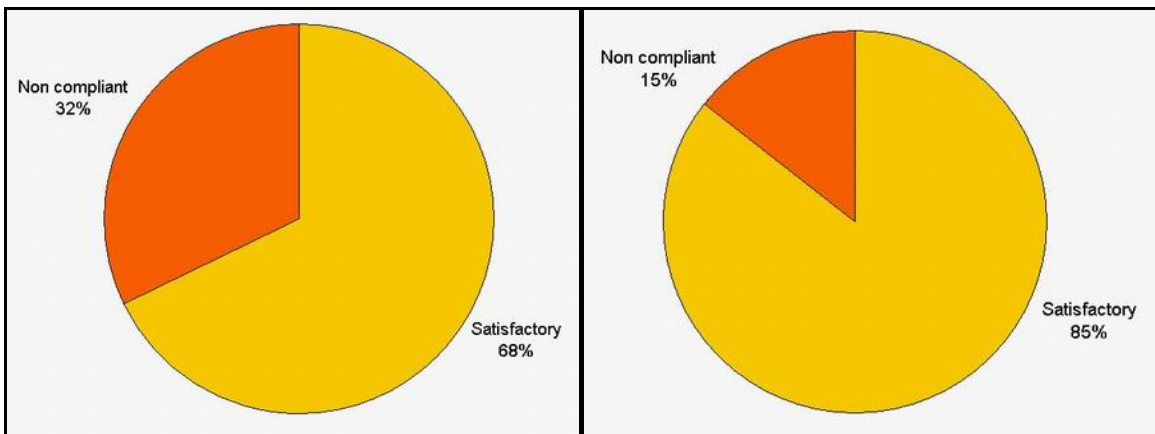


Figure 6 (left): Compliance rate after initial visit. Figure 7 (right): Compliance rate after follow up.

Figures 6 and 7 show over 50% of non-compliant sites became compliant after the first visit. Of the remaining non-compliant sites, all undertook to comply (largely by washing solely with water) and periodic inspections will be undertaken to evaluate progress.

The major misconception encountered during this programme was that the use of biodegradable detergents has no adverse environmental effects. This is promoted to some extent by the detergent manufacturers, and in many cases businesses thought they were being “green” by using these. Although their use is preferable to non-biodegradable phosphate-based detergents, studies have shown that they still have oxygen-depleting effects on receiving waters.

## 4.7 References

MFE. (2002). *The New Zealand Waste Strategy*. Ministry for the Environment. Wellington: New Zealand. Available on the Ministry for the Environment's website at the following link:

<http://www.mfe.govt.nz/publications/waste/waste-strategy-mar02/index.html>

NRC. (2002). *Regional Policy Statement for Northland*. Produced by the Northland Regional Council. Whangarei: New Zealand. Latest version available on the Regional Council's website at the following link:

<http://www.nrc.govt.nz/Resource-Library-Summary/Plans-and-Policies/Regional-Policy-Statement/Regional-Policy-Statement/>

NRC. (2002b). *State of the Environment Report*. Published by Northland Regional Council. Whangarei: New Zealand. Available on the Regional Council's website at the following link:

<http://www.nrc.govt.nz/Resource-Library-Summary/Environmental-Monitoring/State-of-the-Environment-Monitoring/2002-State-of-the-Environment-Report/>

NRC. (2007). *Regional Water and Soil Plan for Northland*. Produced by the Northland Regional Council. Whangarei: New Zealand. Latest version and current plan changes are available on the Regional Council's website at the following link:

<http://www.nrc.govt.nz/Resource-Library-Summary/Plans-and-Policies/Regional-plans/Regional-Water-and-Soil-Plan/>