Auckland
Regional Council
TE RAUHITANGA TAIAO

The Auckland Region Hazardous Waste Programme

Annual Report July 2002 to June 2003

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One of the many reasons for the Auckland Region Hazardous Waste Programme

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EXECUTIVE SUMMARY

Now in its third year of operation, the Auckland Region Hazardous Waste Programme continues to grow, both in terms of customers and with respect to the waste quantities collected through the HazMobile, the AgChem Collection and the rural drop-off facilities.

Visitors to the 15 HazMobile collection events increased by 36% to 9,234. In total, these residents disposed of 273,900 kg of hazardous, which consisted of:

Waste Type	Quantity (kg)	% of Total
Paint	132,700	48%
Waste Oil	68,900	25%
Car and other batteries	48,100	18%
Household chemicals	21,200	8%
Intractable chemicals[1]	3,000	1%
Total	**273,900**	**100%**

The overall participation rate for HazMobile collection days per head of population was 0.9% for all participating councils. This places the Auckland Programme into the lower middle range when compared with HHW Programmes in the USA and Australia, which is good given that the Programme has only been in operation for three years, while most of the better-performing programmes have been in place for up to 15 years.

The above comparison does not include the AgChem Collection (due to the small number of participants) or drop-off facilities (information on customer numbers is not available). The former attracted 88 participants and received 7,800 kg of waste. While customer numbers have not increased significantly, the amount of waste collected has risen by 92% in comparison to the previous year.

The drop-off facilities in the Auckland region currently consist of a small network in rural areas (Warkworth and Silverdale transfer stations) and the Gulf Islands (Great Barrier and Waiheke Islands). Customers who wish to dispose of waste paint can do so at Reid Paints in Penrose. In total, these facilities collected 68,200 kg of hazardous waste, of which 96% was waste paint. This represents an increase of 269% compared to last year, which is largely due to the high quantities of waste paint received at the Reid Paints facility.

In total, the Auckland Region Hazardous Waste Programme collected 349,900 kg of household hazardous waste in the 2002/2003 financial year. This is an increase of 61%.

A review of the Programme is planned for 2004 to identify opportunities for improvement.

[1] Chemicals that cannot at present be treated and disposed of in New Zealand, for example organochlorine pesticides and PCBs.

1 INTRODUCTION

This report provides information about the hazardous waste management programme undertaken in the Auckland region. At present, this programme focuses on hazardous wastes generated in urban and rural households, with a strong emphasis on 'education through delivery', based on the principle that providing information is not enough in itself, as people must also have the opportunity to act on it.

The Auckland Region Hazardous Waste Programme is a joint project of the councils in the Auckland region[2], and has three main components, as described below. The report supplies data on participation, waste quantities and types for the financial year 2002/2003. Comparisons with previous years and similar programmes elsewhere are made where relevant data exists.

1.1 The HazMobile Collection

In the 2002/2003 financial year, 15 HazMobile collections were undertaken. The number of collections for each participating council generally relates to the size of the population, for example the city councils provide four collections each per year while the district councils offer one collection each per year, as shown in Table 1. In total, 9,234 people used the HazMobile last year, an increase of 36%.

Table 1: HazMobile collections in 2002/2003

#	Location	Date	Number of customers[3]	Number of households targeted[4]
1	Rodney District - Kumeu	22 June 2002	220	10,000
2	North Shore City - Birkenhead	10 August 2002	423	(73,500)[5]
3	Manukau City - Pakuranga	14 September 2002	603	21,000
4	Franklin District – Pukekohe	12 October 2002	260	19,000
5	Papakura District - Papakura	2 November 2002	406	15,000
6	Manukau City – Manurewa	16 November 2002	460	20,000
7	North Shore City - Albany	7 December 2002	966	25,000
8	Manukau City - Howick	1 March 2003	577	20,000
9	Auckland City - Orakei	15 March 2003	732	128,000
10	North Shore City – Takapuna	29 March 2003	673	(73,500)[6]
11	Auckland City - Onehunga	12 April 2003	561	128,000
12	Auckland City – Three Kings	10 May 2003	1,058	128,000
13	Manukau City - Papatoetoe	24 May 2003	355	24,500
14	Auckland City – Western Springs	14 June 2003	845	128,000
15	North Shore City – Takapuna	28 June 2003	1,095	25,000
	Total number of customers		9,234	

2 Excluding Waitakere City, which operates a HHW drop-off facility at its transfer station.

3 Based on the number of vehicles and individuals arriving on foot, but not taking into account that one customer may dispose of waste from several households.

4 The total number of households in the areas covered by the HazMobile Programme are:

Auckland City:	128,000	Franklin District	19,000
Manukau City:	85,000	Papakura District:	15,000
North Shore City:	73,500	Rodney District:	32,000

5 Numbers in brackets indicate that no mail drops were undertaken for this collection.

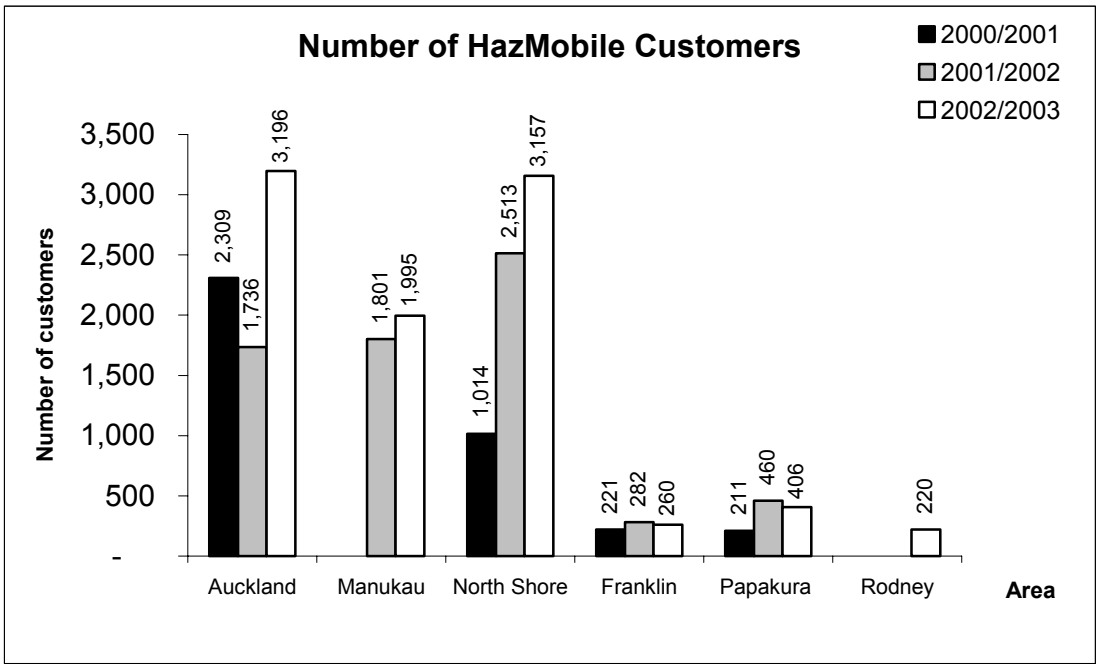
To ensure that comparisons with previous years are as accurate as possible, the Rodney collection has been included in the current year although strictly speaking it was held in the previous financial year.

The changes in customer numbers since the commencement of the HazMobile Programme is shown in Figure 1.

Numbers on the North Shore have continued to rise since the beginning of the Programme (148% in 2001/2003 and 26% in 2002/2003), despite the fact that two of the North Shore collections were not advertised through a leaflet drop in the neighbourhood (Birkenhead in August and Takapuna in March). An increase in customer numbers of 11% since last year has also been observed in Manukau City. In Auckland City, the efficacy of leaflet mail drops is demonstrated by a customer decrease of 25% between 2000/2001 and 2001/2002 (no mail drops were undertaken that year), and the subsequent increase of 84% in 2002/2003, when full mail drops were resumed.

In contrast, customer numbers for the smaller districts (Franklin and Papakura) dropped slightly, by 8% and 12% respectively, although waste quantities increased for those collections, by 8% and 15% respectively (see Figure 4). This may be explained by the considerable number of customers at these collections who stated that they were not just disposing of their own waste, but also of waste belonging to their neighbours and family members.

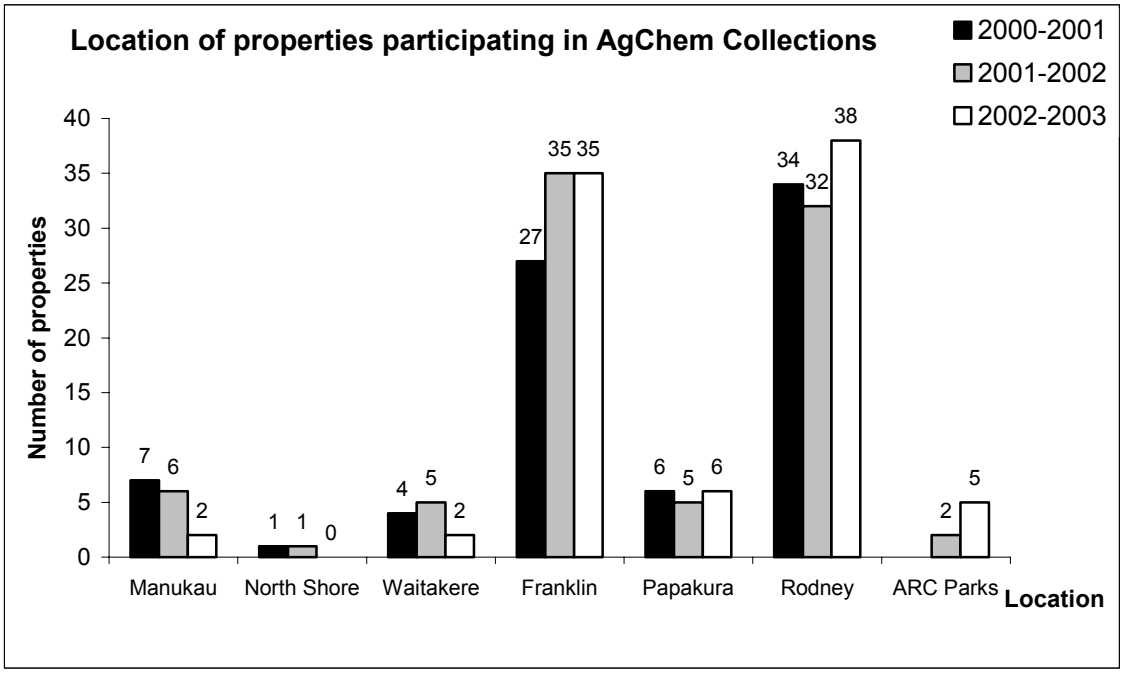
Figure 1: Numbers of HazMobile customers by area



1.2 The AgChem Collection

This collection is provided by the ARC as a service to its rural residential ratepayers. Unlike the HazMobile collections, which are primarily targeted at urban residents with relatively small amounts of hazardous waste, the AgChem collection aims to remove large quantities of unwanted agricultural chemicals directly from a customer's property. In 2002/2003, three collections were offered, and a total quantity of 7,800 kg of unwanted chemicals and other hazardous waste was collected from 88 properties, an increase of 92% compared to the previous year. The location of properties visited to collect the waste is shown in Figure 2 (see also Section 2.2).

Figure 2: Location of properties visited during AgChem collections



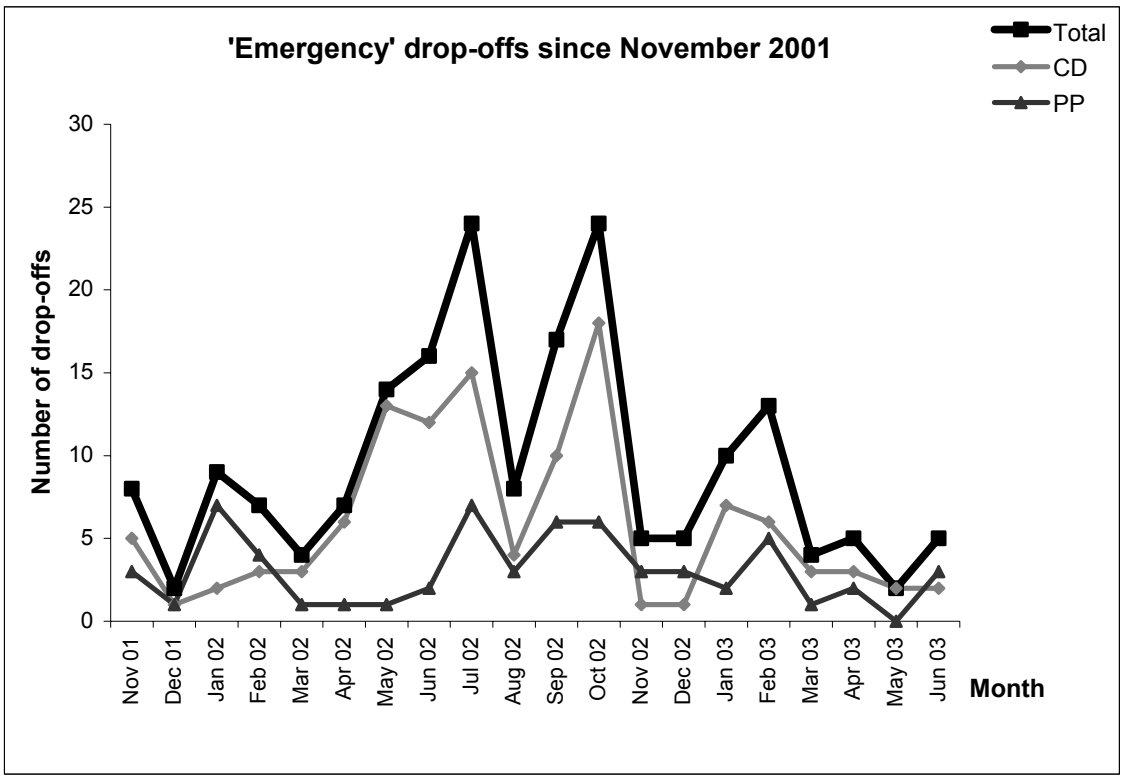
1.3 Drop-off Facilities

The third component of the hazardous waste programme is a network of drop-off facilities serving the rural and Gulf Islands communities in the Auckland region, and the so-called 'emergency drop-off facilities'. Regular HHW (household hazardous waste) drop-off facilities are located at the following transfer stations:

- Snells Beach – Warkworth
- Silverdale
- Waiheke Island
- Great Barrier Island.

'Emergency' drop-offs may be undertaken by prior arrangement with the ARC at either Constellation Drive transfer station (CD) or Pikes Point transfer station (PP), for a charge of $6. Customers who only wish to dispose of old paint can do so at the Reid Paint shop in Penrose during normal business hours. Figure 3 shows how many 'emergency' drop-offs were made since commencement of this service in November 2001. Adjusting for the fact that emergency drop-offs only occurred over a period of eight months in 2001/2002, the increase in drop-offs was 22%, to a total of 245. However, the graph outlines that after a period of relatively high demand about a year after the introduction of the HazMobile Programme, the requests to visit either Constellation Drive or Pikes Point have decreased markedly for both locations. It is hoped that this is due to more awareness of the HazMobile Programme in general.

Figure 3: 'Emergency' drop-offs



2 WASTE STATISTICS

2.1 The HazMobile Collection

2.1.1 Waste Quantities

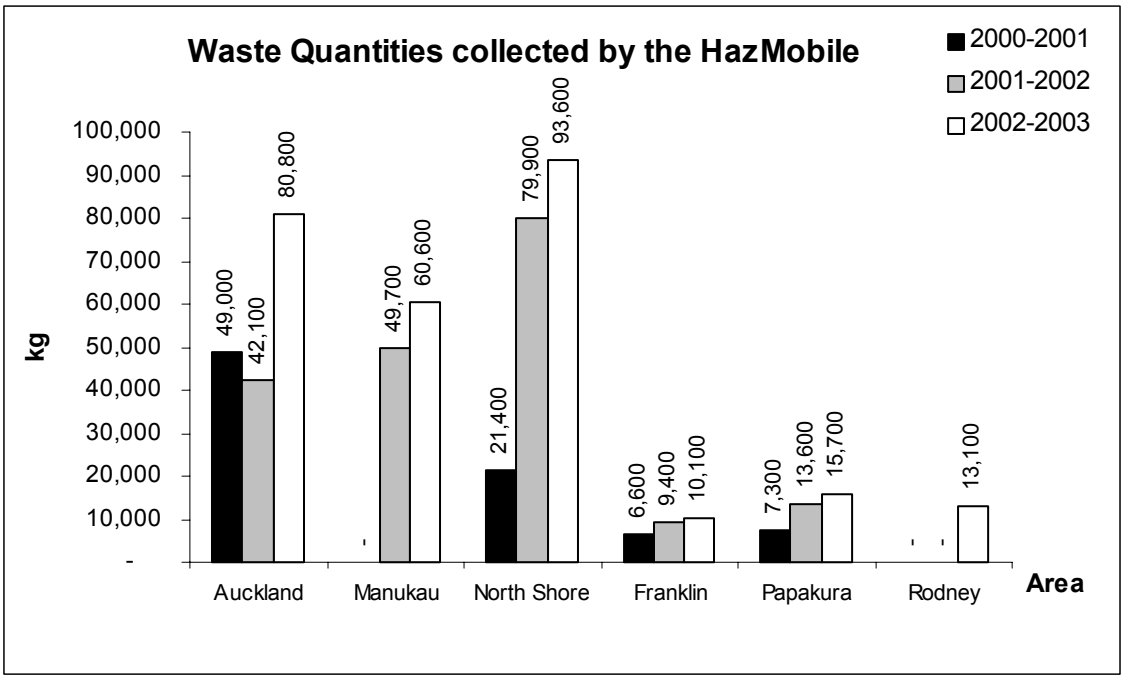
Overall, the HazMobile collected 273,900 kg of hazardous waste (Table 2), an increase of 37% compared with HazMobile collections in the previous year.

Table 2: Total waste quantities collected by the HazMobile in 2002/2003

Waste Type	Quantity (kg)	% of Total
Paint	132,700	48%
Waste Oil	68,900	25%
Car and other batteries	48,100	18%
Household chemicals	21,200	8%
Intractable chemicals[6]	3,000	1%
Total	**273,900**	**100%**

Figure 4 shows the quantities of waste collected, by area, over the three years of the HazMobile Programme.

Figure 4: Waste quantities collected by the HazMobile over three years



As expected, waste quantities have increased in the urban areas to approximately match the increase in customer numbers. Waste quantities have also increased in the more rural areas despite the slight decrease in customer numbers (see Section 1.1).

[6] Chemicals that cannot at present be treated and disposed of in New Zealand, for example organochlorine pesticides and PCBs.

Figure 5: Waste quantities per customer

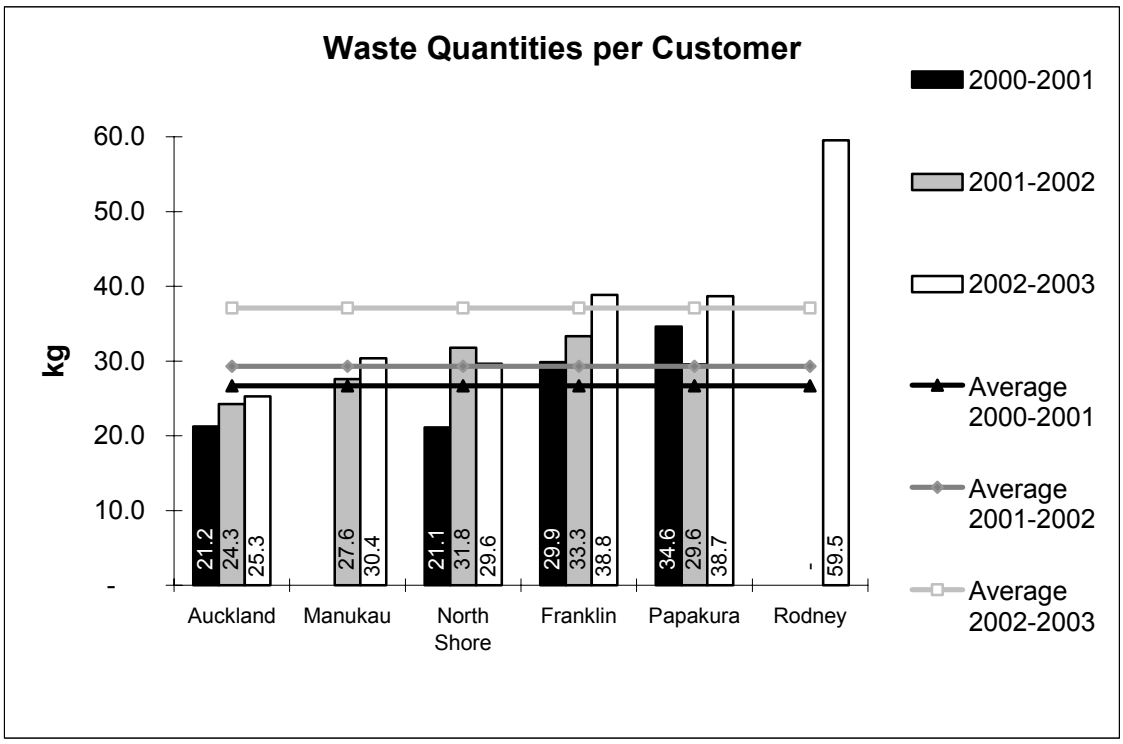


Figure 5 shows the average quantity of waste brought in by customers. It is of interest that the average quantity of waste delivered by Rodney customers was 59% higher than the overall average weight of 37.5 kg per customer in 2002/2003, which is probably a reflection of the rural nature of the area as well as the fact that this was the first ever HazMobile collection in the western wards of Rodney District.

2.1.2 Waste Composition

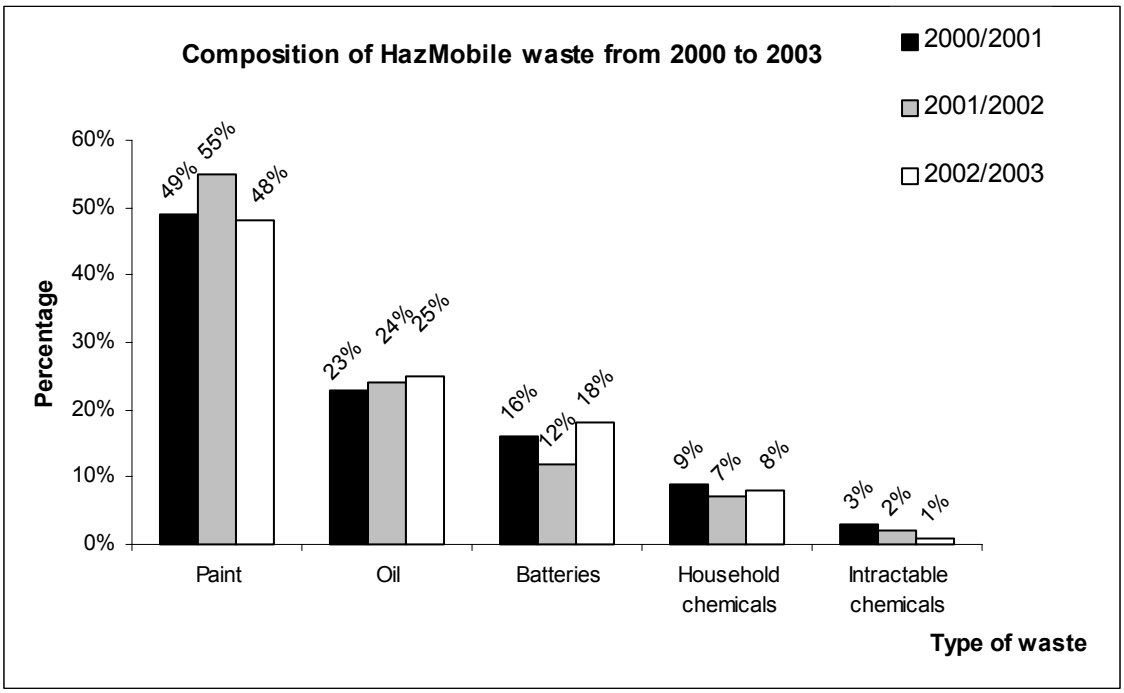
Waste types are categorised as follows:

- Waste paint, on average 51%[7]
- Waste oil, on average 24%
- Car and other batteries, on average 15%
- Household chemicals, on average 8%
- Intractable chemicals, on average 2%.

In the three years that the HazMobile has been operative, the respective percentages of chemical wastes have not changed significantly, as shown in Figure 6. There has, however, been a slight increase in waste oil and batteries, which may reflect the growing lack of alternatives for waste oil disposal, such as drop-off facilities at petrol stations. However, because data has only been collected for three years, it is not possible as yet to establish whether the above represent consistent trends.

[7] Based on three years of data collection.

Figure 6: Composition of HazMobile waste



2.2 The AgChem Collection

Since its inception in October 2000, the AgChem Collection has received a total of 15,300 kg of hazardous waste. This is shown in Figure 7.

On average, 43% and 39% of this waste comes from Rodney and Franklin Districts respectively, reflecting the largely rural nature of these areas (Figure 8). Although there has, so far, been a continuous increase in the amounts of waste collected, the number of properties the waste originated from has remained more or less constant, being 79 in 2000/2001, 86 in 2001/2002 and 88 in 2002/2003.

Figure 7: Waste Quantities received over three years of AgChem collections

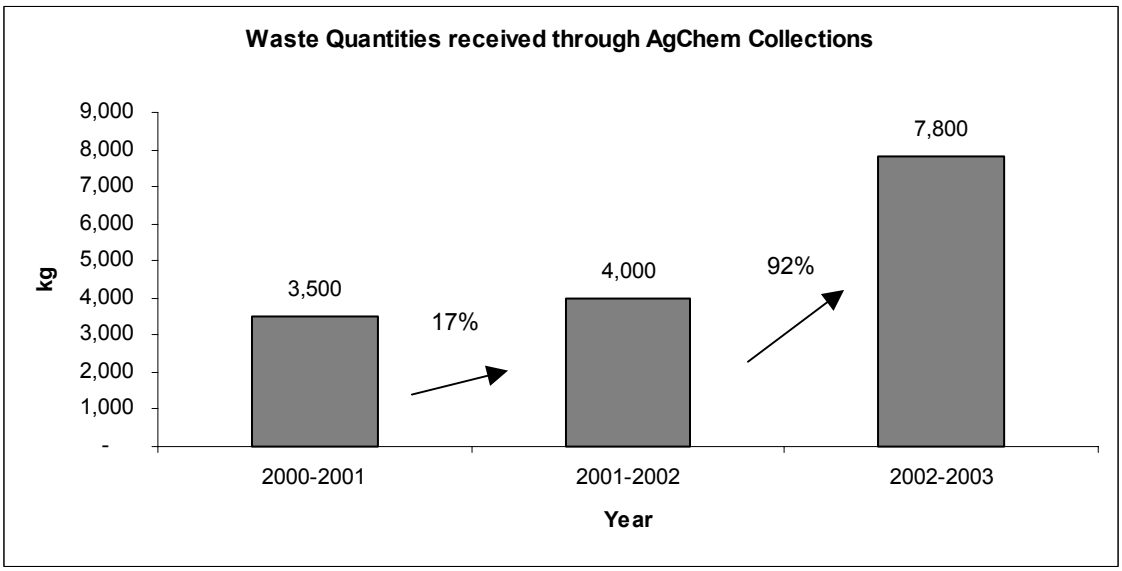
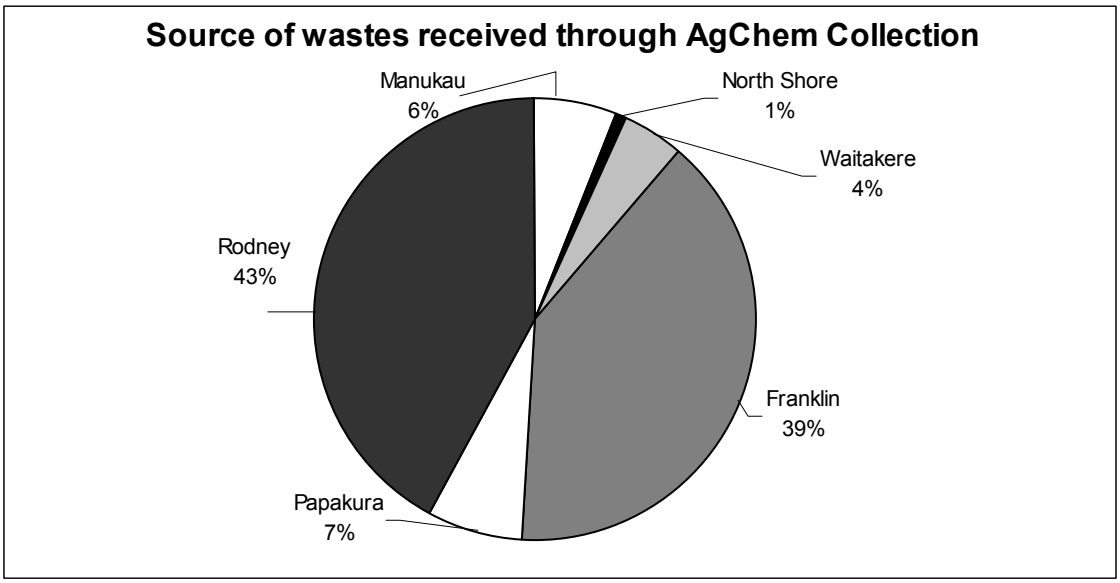


Figure 8: Source of agricultural chemical waste collected over three years

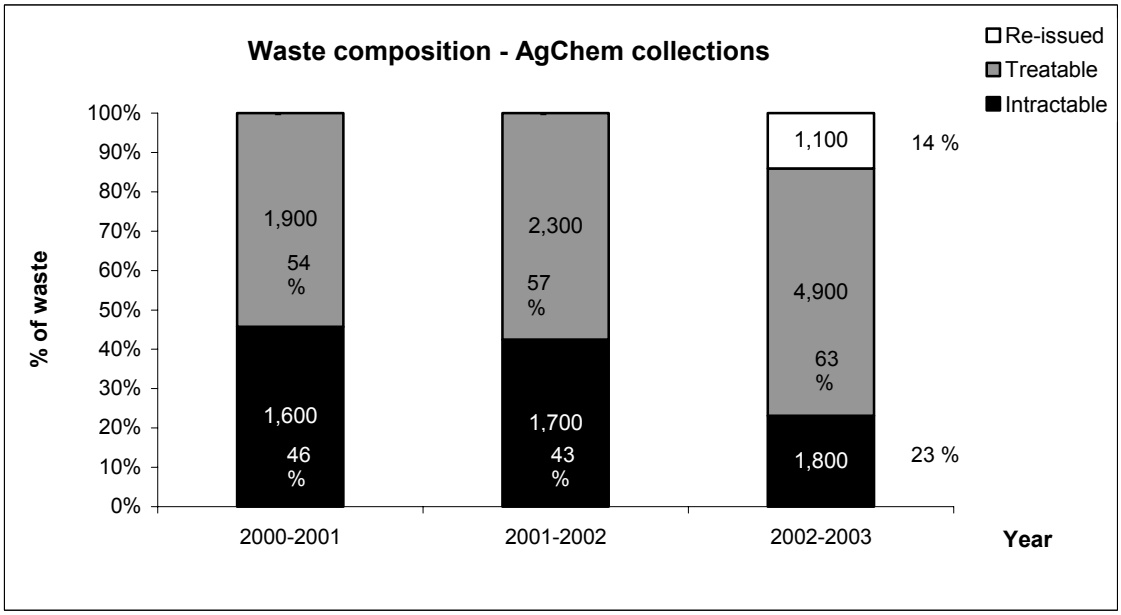


Also of note is the composition of the waste, which is broadly categorised into:

- Intractable, such as DDT and other organochlorine compounds
- Treatable, which includes most of the more recent agricultural chemicals as well as animal remedies and fertilisers
- Able to be re-issued.

Figure 9 provides an overview of how much of each waste type has been collected over the last three years. While the percentage of intractable waste has remained approximately the same during the first two years of collection, it decreased by almost half (from 43% to 23%) in 2002/2003. This seems to indicate that the stockpile of very old chemicals is declining, and it is hoped that this trend will continue in the future.

Figure 9: Waste composition in AgChem Collections



2.3 Drop-off Facilities

2.3.1 Regular drop-off facilities

In 2002/2003, only the Silverdale and Warkworth drop-off facilities were serviced due to insufficient quantities of waste at the other sites. The quantities of waste collected from these facilities are summarised in Table 3.

Table 3: Waste quantities collected through regular drop-off facilities

	Silverdale		Warkworth	
Paint	4,300 kg	84%	1,600 kg	62%
Household chemicals	500 kg	10%	500 kg	19%
Intractable chemicals	300 kg	6%	500 kg	19%
Total	**5,100 kg**		**2,600 kg**	

Waste quantities have increased significantly since 2000/2001, by 95% in Silverdale and 955% (!) in Warkworth. Overall, the amount of waste collected in this way has increased by 61%, despite the fact that the drop-off facilities on Great Barrier Island and Waiheke Island were not serviced.

2.3.2 'Emergency' drop-offs

The quantity of waste collected through the 'emergency' drop-offs has also increased markedly, from 13,600 kg in 2001/2002 to 60,600 kg in 2002/2003 (346%), despite the fact that the Pikes Point facility was not serviced in the past 12 months. Table 4 provides an overview of the quantities and types of waste received in this manner.

Table 4: Waste quantities collected through 'emergency' drop-off facilities

	Constellation Drive		Reid Paints	
Paint	8,400 kg	91%	51,300 kg	99%
Household chemicals	800 kg	9%	100 kg	<1%
Total	**9,200 kg**		**51,400 kg**	

Overall, the waste quantities collected through the different drop-off facilities (68,200 kg) rose by 269% between 2001/2002 and 2002/2003. The majority of this increase is due to waste paint collected through the Reid Paint facility (Figure 10).

2.4 Total Waste Quantities

In total, the Auckland Region Hazardous Waste Programme collected 349,900 kg of household hazardous waste from residents in the Auckland region between July 2002 and June 2003. This represents an increase of 61% compared to last year. An overview of the amounts of hazardous waste collected through this Programme since 1998[8] is shown in Figure 11. The overall waste composition is similar to that for the HazMobile collections alone, being:

- Paint 57%
- Waste oil 20%
- Batteries 14%

[8] Prior to the introduction of the HazMobile Programme, residents could dispose of their household hazardous waste at some of the transfer stations in the Auckland region. This system was not viable for a number of reasons, including health & safety concerns.

- Household chemicals 8%
- Intractable chemicals 2%.

Figure 10: Waste quantities collected at drop-off facilities

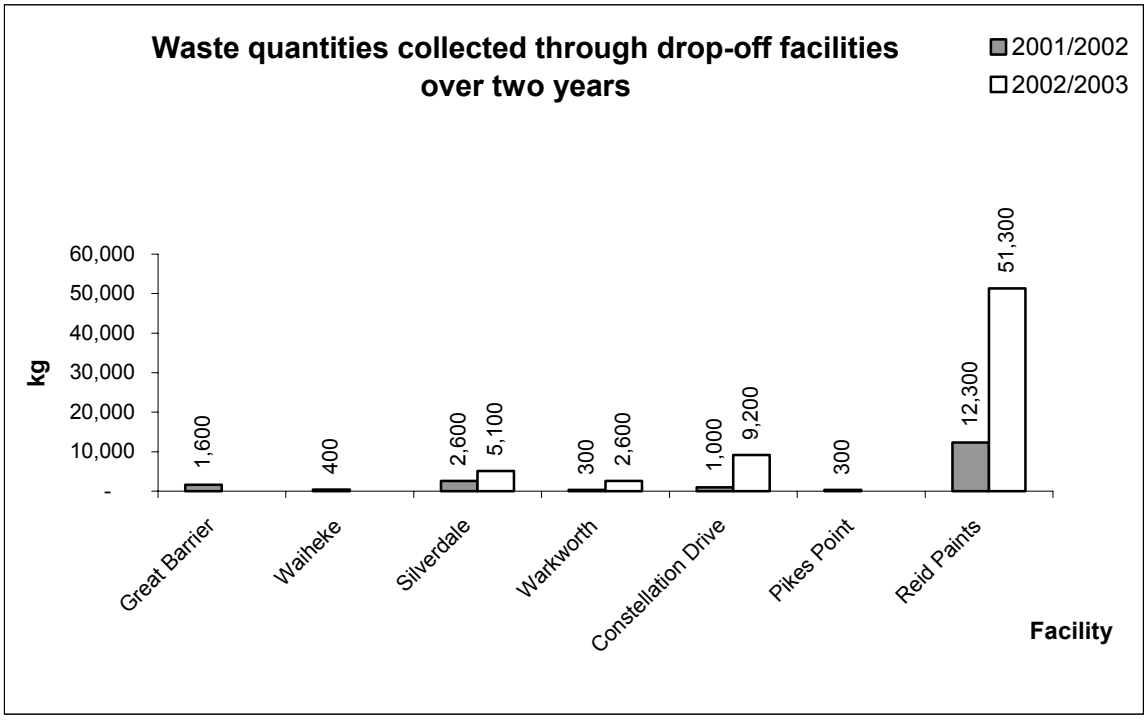
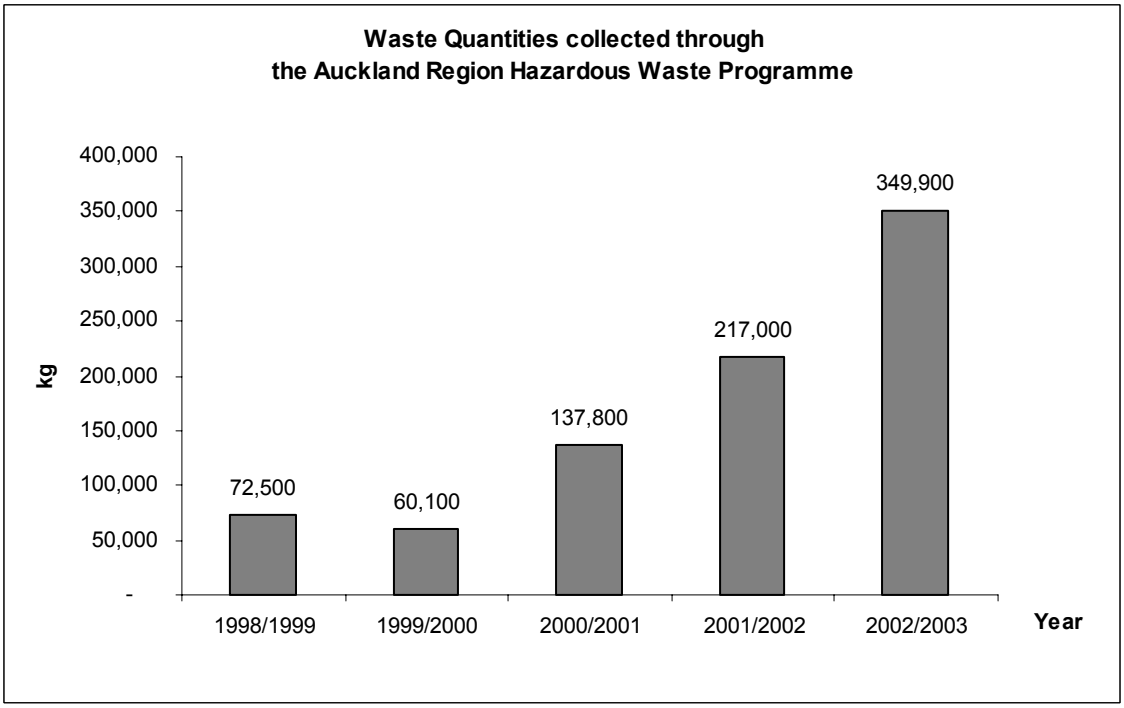


Figure 11: Household hazardous waste collected in the Auckland region since 1998



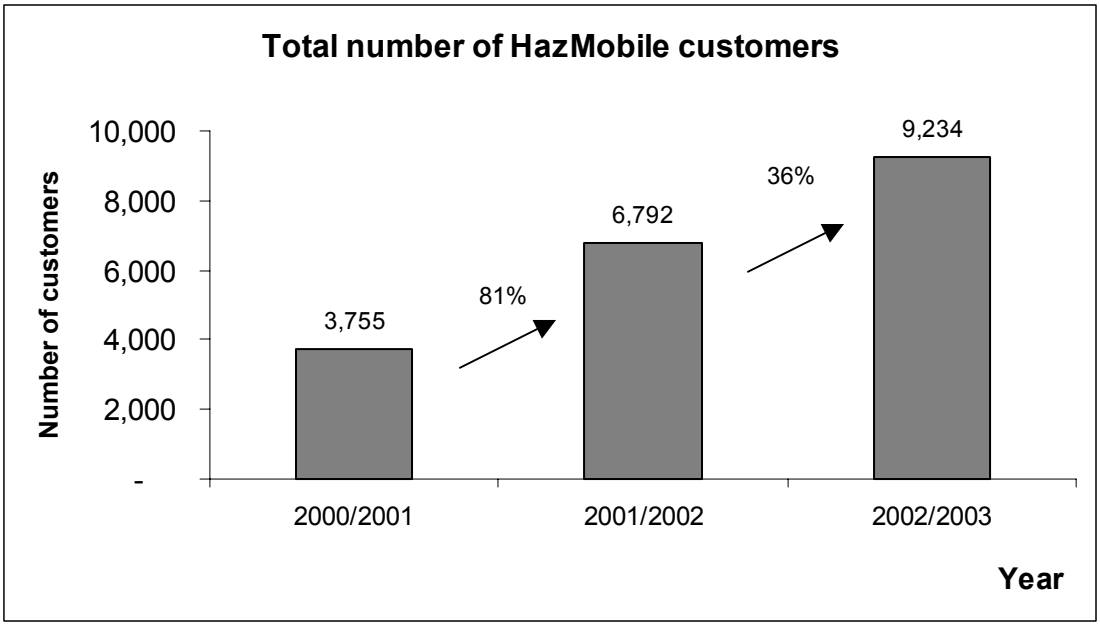
3 PUBLIC AWARENESS

Although the diversion of hazardous materials from landfills and the sewer system is an important reason for undertaking hazardous waste collections, public education about hazardous waste is a focal point of this Programme. At present, public awareness is measured in three ways:

- Customer numbers at HazMobile collections
- Visitors to the HazMobile website www.hazmobile.govt.nz
- Hazardous waste inquiries to the ARC Call Centre.

As noted in Section 1, customer numbers at HazMobile collections have increased since the trial year (2000/2001), as shown in Figure 12.

Figure 12: Total number of HazMobile customers over three years



A similar trend can be seen with respect to website use and the number of hazardous waste related phone inquiries, as shown in Figures 13 and 14 respectively. Although there are monthly variations in the number of inquiries received, the general trend demonstrates increased interest by the public and, by implication, a growing awareness that household hazardous waste should be disposed of with care.

Figure 13: Number of HazMobile website hits since establishment of website

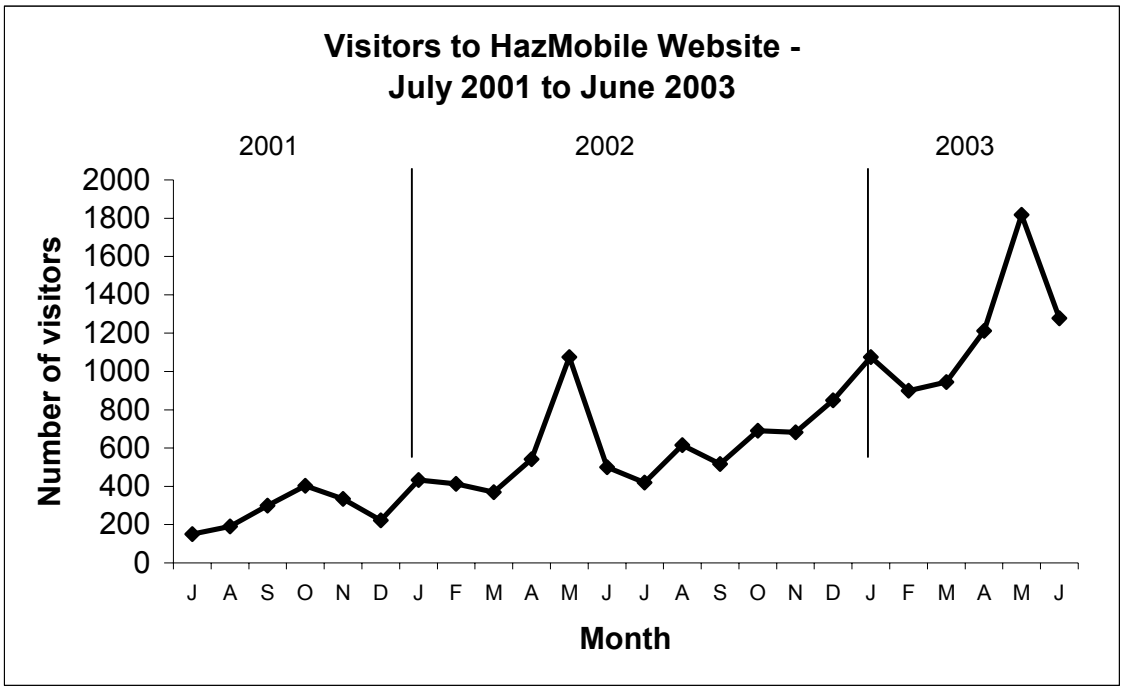
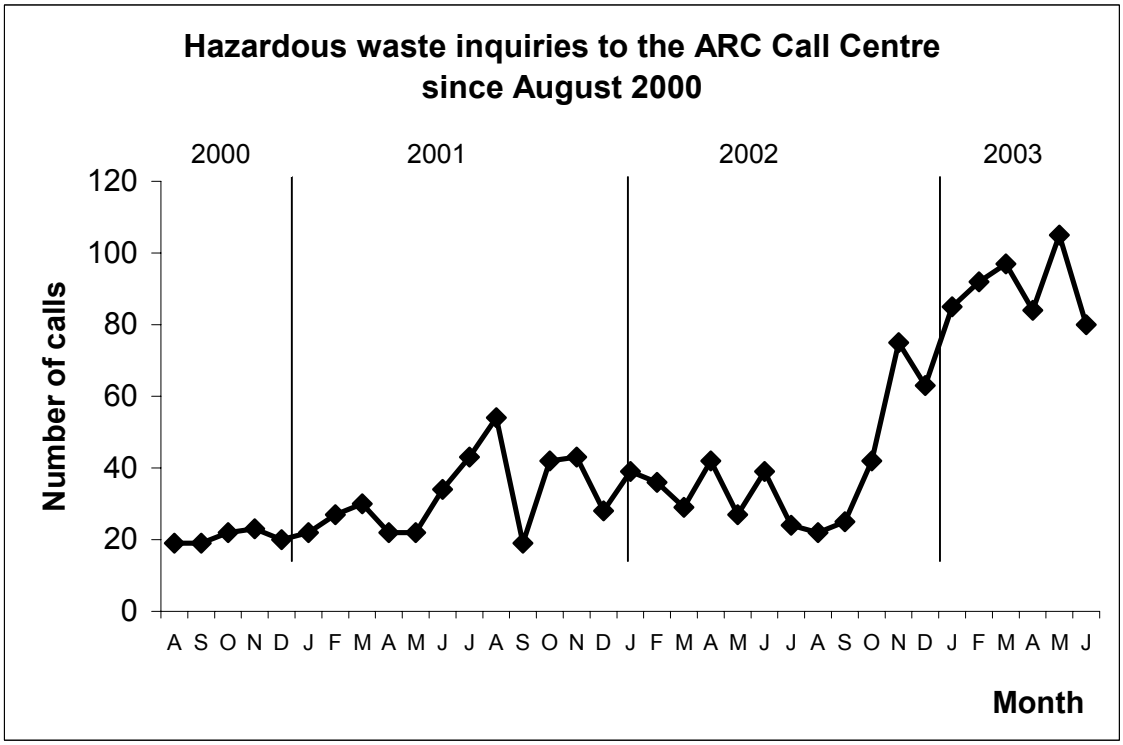


Figure 14: Number of hazardous waste inquiries to ARC Call Centre



4 OTHER MATTERS

4.1 Commercial Hazardous Waste Collection Research Project

Having successfully established the domestic component of the Programme, the councils undertook a research project in September 2002 to investigate the feasibility of providing a user-pays service for small businesses with hazardous waste.

Two streets in the industrial areas of Takapuna and Glenfield were selected, with 128 and 106 businesses respectively. Of those, 48 businesses in Takapuna (38%) and 56 businesses in Glenfield (53%) potentially generated hazardous wastes on their premises.

Each business in both areas was sent a joint letter from the ARC and North Shore City Council inviting them to participate in a hazardous waste collection and including a list of charges. The collection was to take place on a specified day, and interested businesses had to register with the ARC Call Centre by a specific date.

As registrations were not forthcoming, a reminder letter was sent two weeks later. Eventually, two registrations were received and the waste (60 kg of recyclable paint from one business and 176 kg of photographic chemicals from another) was collected as planned.

Following this disappointing outcome, a phone survey in the Glenfield area was undertaken to ascertain the reasons for the lack of response. 23 of the businesses potentially generating hazardous waste were interviewed. Only one claimed not to have received the letter. Of the remaining 22, 52% stated that they had no hazardous waste. 22% reported that their hazardous waste is picked up by a waste treatment company, 4% thought the service offered by the councils was too expensive and the remaining 21% refused to answer the question of why they had not registered for the pick-up.

However, nine of the people contacted were very cooperative and forthcoming, and their comments can be summarised as follows:

- The project is a good idea, but the prices quoted are too expensive (more than the current contractor charges).
- The service is a good idea and if they had any hazardous waste they would use it (this came from two businesses that did not actually have hazardous waste).
- The mail-out approach does not work – small businesses do not have time to deal with letters (this assessment was supported by the number of companies that claimed to be too busy to talk).
- The idea is good in principle, but needs a more personal approach and should target those that actually produce hazardous waste. Site visits to individual businesses were suggested by one respondent.
- One respondent stated that there is not enough incentive (in terms of regulatory control) to deal with wastes properly – this respondent had spent some years working overseas and thus had a broader perspective. Another thought that he already spent too much on rates and does not receive any services for this, and that the council should introduce a free rubbish collection for industrial/commercial areas.

On the whole, most participants appeared to have some knowledge as to what a hazardous waste was (although this required prompting in some cases). Having the waste taken away by a contractor was seen as an adequate method of dealing with the waste generated.

The councils then took another approach and used the Albany HazMobile collection to run a user-pays service for small businesses. This was advertised on the mail-drop leaflet announcing the collection. The cost for up to 100 kg or litres of oil, paint, non-chlorinated solvents and cleaning chemicals was $20, and car batteries were accepted free of charge.

As was the case with the previous attempt, the response was disappointing. Three customers used the service, one of whom (disposing of 340 l of oil) refused to pay. The other two were commercial painters delivering 92 kg and 86 kg of paint each, and small amounts of oil and turps. Both were happy to pay and considered this to be an excellent service.

Given the lack of interest shown by the business community in this regard, further initiatives in this area will be deferred until the expansion of the Auckland Programme.

4.2 How does the Auckland Programme compare with others?

At present, HazMobile-style collections are only undertaken in the Auckland region, although this may change in the future. AgChem collections are being undertaken elsewhere in New Zealand, although mostly through drop-off facilities. Therefore, to gauge the performance of the Programme in general and the HazMobile collections in particular a comparison with overseas programmes appears to be a more appropriate means for assessment.

Figure 15 shows participation rates per capita for a number of international HHW programmes for which data could be obtained[9], and Figure 16 presents waste quantities collected per capita for the same programmes. All data refer to 2001 or 2002, with Washington and Oregon State information referring to 1999. Generally, HHW Programmes use either permanent staffed facilities, mobile collection events or a combination of both. Many programmes have been operation since the early or mid 1980s, others were established in the mid to late 1990s.

Three programmes stand out for their impressive participation rates (calculated as participants per head of population) – Alachua and Leon Counties in Florida, USA and Hennepin County in Minnesota, USA. Both Leon (population 239,000) and Hennepin (population 1,115,000) are urban areas, incorporating the State capitals of Tallahassee (population 156,000) and Minneapolis, and both use a combination of permanent facilities and mobile collections (one facility and 30 collection days in Leon County and two facilities and six collection days in Hennepin County). These programmes have been in operation since the mid 1980s.

With its participation rate of 0.9%, Auckland Region occupies 15th place (out of 23) and falls in the lower middle of the range. Auckland's participation rate is, of course, based on the HazMobile collections only. A comparison on the basis of waste quantities per capita sees Auckland rise to 14th place (out of 22), probably because the additional amount collected through the AgChem collections and drop-off facilities is taken into account.

Although being placed midway in the lower half of performance allows room for improvement, the following factors should be considered:

- The Auckland Programme is 'younger' than all the others – data from the earlier years of other programmes show that participation rates continue to climb, steeply in the first three to five years and less so in subsequent years.
- The highest achieving programmes offer permanently staffed facilities as well as mobile collections.
- Both Australia and the USA have waste legislation in place that provide an additional incentive and may have contributed to a higher awareness and participation of residents.

In this light, performance of the Auckland Programme can be regarded as satisfactory.

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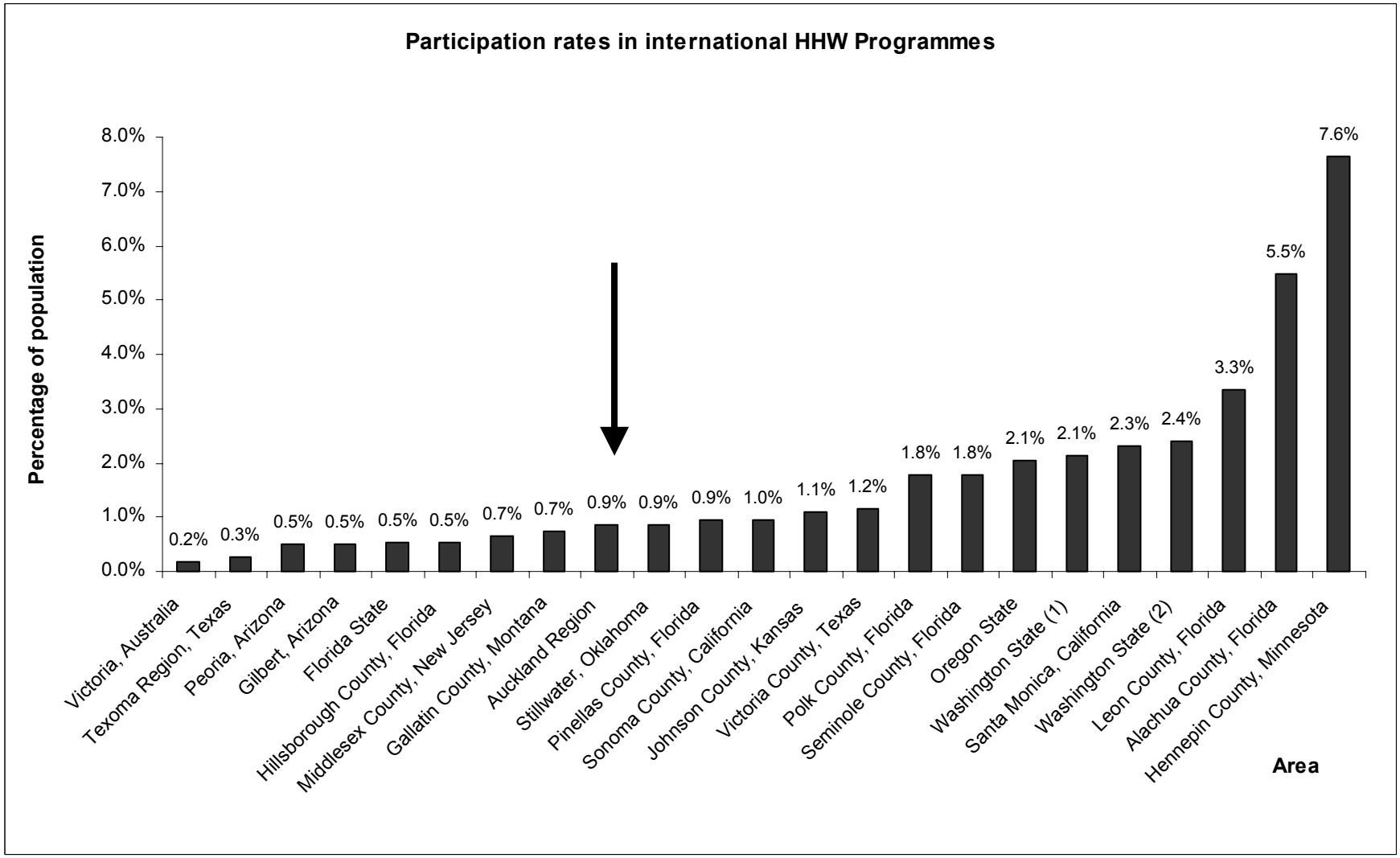
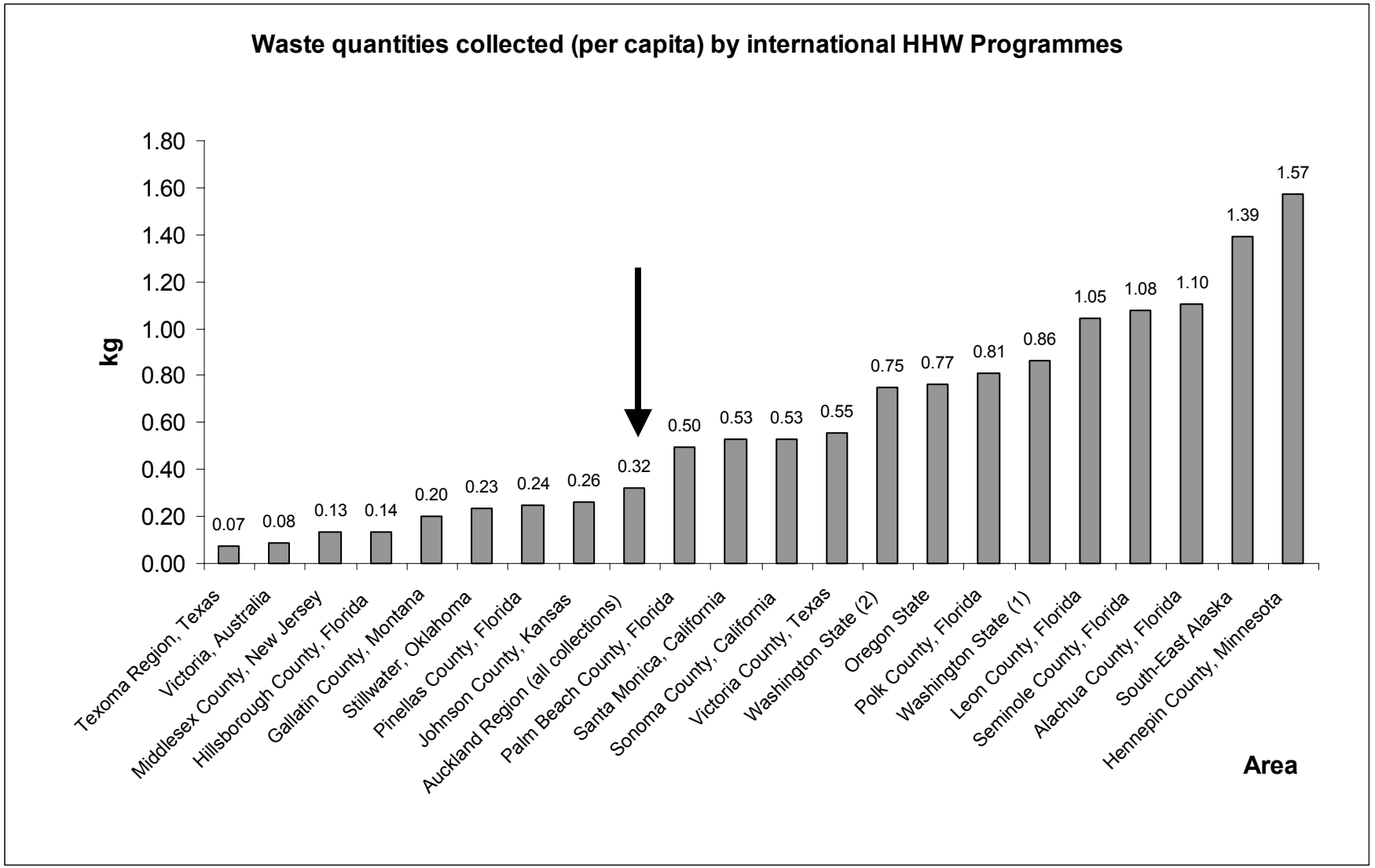
[9] Auckland data are for HazMobile collections only as no customer information is available for drop-off facilities.

Figure 15: Comparison of participation rates with international HHW Programmes



Note: Washington State (1) refers to mobile collections, Washington State (2) refers to permanent collection facilities.

Figure 16: Comparison of waste quantities per capita with international HHW Programmes



4.3 The Way Ahead

As the increases in customers visiting the HazMobile and the rising waste quantities show, the Programme has so far succeeded in raising awareness about the hazardous wastes most people have in their homes and garages. Many of the urban HazMobile collection days now process customer numbers far above any of those expected when the Programme was set up. However, as the comparison with programmes elsewhere in the world shows, there is still plenty of room for improvement.

Given that there is a limit of how many people can be dealt with efficiently in the four hours of any given HazMobile collection, the councils are committed to reviewing their options for the future. The development of a long-term strategy identifying appropriate options for providing convenient household hazardous waste disposal as well as cost-effective disposal for small businesses is scheduled to begin late in 2003. An integral part of this process will be the consideration of alternative funding options for an expanded Programme and an implementation plan.

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