

# Resources and Waste



“We are pleased to see Wellington City Council taking such a positive, forward-looking approach to dealing with a part of our waste stream that is often overlooked but has significant environmental impacts.”

– Ministry for the Environment Corporate and Community General Manager Fiona Morgan.

## WHAT WE DO

Our resources and waste work includes:

- providing the city's water supply
- stormwater and sewage disposal
- recycling and rubbish collection
- running the Kiwi Point Quarry
- promoting energy efficiency and sustainability
- operating the Southern Landfill, including re-use and recycling operations
- looking after closed landfills.

## KEY CHALLENGES

Through our work in this area, we help to ensure public health and safety, and we protect the city's environment from harm.

Progress is being made in increasing the amount of waste that is re-used and recycled, and our approach to wastewater treatment ensures there are minimal environmental effects.

But, like any city, we face significant, ongoing challenges. We need to use water and energy more efficiently to reduce the risk of supplies running out, and – in the case of energy – to reduce our contribution to global climate change.

We need to further reduce the amount of waste we produce, and ensure that waste is disposed of in ways that cause the least possible harm.

## CASE STUDY: TURNING KAI INTO COMPOST

**We're helping Wellington businesses to turn food scraps into compost.**

Six days a week since January, we've been collecting food scraps from Wellington businesses and delivering them to the Living Earth plant at the Southern Landfill.

The Kai to Compost scheme, introduced on a one-year trial basis, involves 50 businesses – including the Westpac Wellington Regional Stadium, the Council's own cafeteria, hotels, restaurants, supermarkets and cafes.

Kitchen waste generates leachate and the greenhouse gas methane in landfills. By turning it into compost, we're helping to create a resource out of something that would otherwise harm the environment.

Between January and June, more than 200 tonnes of food waste was collected under the programme.

### This is one example of our commitment to reducing waste.

The scheme has received funding from the Ministry for the Environment's Sustainable Management Fund, which supports community initiatives with long-term environmental benefits.

It is one of many examples of our commitment to reduce waste and minimise harm to the city's environment. In recent years, the amount of rubbish dumped at the city's landfills has declined, and the amount of recycling has increased.

With the closure of the Northern Landfill early in 2006, we're keen to see this trend continue. The Southern Landfill has capacity to deal with the city's solid waste for many years to come, but the length of its life will depend on our ability to reduce the amount of solid waste being dumped.

As part of our Environment Strategy, adopted in 2006, we are also committed to working with others to achieve more efficient use of water and energy in the city.

### KEY FACTS

Amount of water used in the city per person during 2005/06: 167,126 litres. Percentage increase from the previous year: 1.

Tonnage of kerbside recycling collected from Wellington households in 2005/06: 11,000. Percentage increase from previous year: 6.

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### WHAT IT COST

	NET EXPENDITURE/(REVENUE) BY ACTIVITY \$000				CAPITAL EXPENDITURE \$000				
	ACTUAL 2006	BUDGET 2006	VARIANCE 2006	ACTUAL 2005	ACTUAL 2006	BUDGET 2006	VARIANCE 2006	ACTUAL 2005	
6.1.1 Water Collection and Treatment	12,540	12,396	(144)	12,338	-	-	-	-	
6.1.2 Water Network	12,137	10,632	(1,505)	10,449	13,472	13,517	45	12,373	
6.2.1 Waste Minimisation	(104)	65	169	31	-	-	-	-	
6.2.2 Water Conservation	246	367	121	390	81	397	316	392	
6.2.3 Quarry Operations	(563)	(655)	(92)	(155)	-	-	-	-	
6.3.1 Household Recycling **	1,970	1,694	(276)	2,318	-	-	-	-	
6.4.1 Stormwater Collection/Disposal Network	9,962	10,123	161	8,544	5,376	5,395	19	8,435	
6.4.2 Stormwater Management	146	166	20	115	-	-	-	-	
6.4.3 Sewage Collection/Disposal Network	12,882	12,886	4	12,703	8,371	9,317	946	6,813	
6.4.4 Sewage Treatment	17,504	18,068	564	18,177	-	-	-	-	
6.4.5 Solid Waste Collection	562	230	(332)	396	-	-	-	-	
6.4.6 Solid Waste Landfills	(2,558)	(1,773)	785	(3,692)	443	443	-	1,273	
6.4.7 Closed Sites Aftercare	1,153	937	(216)	1,004	-	-	-	1	
<b>OPERATING TOTAL</b>	<b>65,877</b>	<b>65,136</b>	<b>(741)</b>	<b>62,618</b>	<b>CAPITAL TOTAL</b>	<b>27,743</b>	<b>29,069</b>	<b>1,326</b>	<b>29,287</b>

\*\* Note: This was split between 6.3.1 Transfer Station Recovery and 6.3.2 Household and Business Recycling during the 2005 financial year.

## OUTCOME 6.1

# WATER AND ENERGY

OUR AIM IS FOR WELLINGTON'S RESIDENTS AND ORGANISATIONS TO HAVE ACCESS TO HIGH-QUALITY WATER AND ENERGY SUPPLIES.

## OUTCOME INDICATORS

	2000/01	2003/04
Average annual household expenditure on fuel and power – domestic use (\$).	1,425.32	1,595.36

Note: This information is calculated every three years by Statistic New Zealand, updated information will be available in 2006/07.

Source: Statistics NZ (Note: statistics are for 2000/01 & 2003/04).

## PROGRESS TOWARDS OUR OUTCOME

- The average household expenditure on domestic fuel and power has increased by 12 percent between 2000/01 and 2003/04.

## HOW WE PERFORMED

### NUMBER OF TIMES A YEAR SUBSTANDARD 'BULK-WATER' REACHES OUR CUSTOMERS

Our 2005/06 Annual Plan target was for no occurrences of substandard 'bulk-water' to reach our customers (monitored at all 18 supply points of the network). The target was achieved with no occurrences being found.

Source: Capacity (Wellington Water Management Ltd.)

## 6.1.1 ACTIVITY: WATER COLLECTION AND TREATMENT

A reliable supply of drinkable water is essential for the health and well-being of residents and the viability of the city as a whole. We purchase water in bulk from the Greater Wellington Regional Council, and are charged according to how much water is used. Some of our costs are recovered from customers with water meters, while the rest are covered by water rates.

Greater Wellington treats the water at four sites in the Hutt Valley – Te Marua, Waterloo, Gear Island and Wainuiomata – to ensure it meets New Zealand drinking water standards.

## WHAT WE DID

- We used 167,126 litres per person during the year, compared to 165,400 litres per person in 2004/05.
- We continued to carry out analysis on potable water in compliance with Ministry of Health standards. The 2005 Drinking Water Standard came into effect from 31 December 2005. The Council is compliant with the new standard.
- We continued discussions with Greater Wellington Regional Council on the bulk water agreement.

## WHAT IT COST

COST OF ACTIVITY \$000	ACTUAL 2006	BUDGET 2006	VARIANCE 2006	ACTUAL 2005
<b>Operational projects</b>				
Expenditure	12,551	12,396	(155)	12,349
Revenue	11	-	11	11
Net expenditure	12,540	12,396	(144)	12,338
<b>Capital projects</b>				
Expenditure	-	-	-	-

### 6.1.2 ACTIVITY: WATER NETWORK

We own a water network of 75 reservoirs, 34 water pumping stations, more than 7,900 hydrants, and about 1,000 kilometres of underground pipes.

This network is managed by Capacity (a joint Wellington-Hutt water management company) to ensure both cities have high-quality water available at all times for drinking, household and business uses, and for emergencies such as firefighting. We aim to ensure the network is managed as efficiently and cost-effectively as possible.

Maintenance of the network includes upgrading and replacing pipes and other infrastructure, responding to complaints, fixing leaks and other faults, and regular flushing of the pipes and cleaning of the reservoirs. Water quality is continuously monitored to ensure it meets national standards.

The water network budget also covers resource consents and new water connections.

#### WHAT WE DID

- We replaced the old 125mm water main in Adelaide Road and Riddiford Street with a larger ductile 200mm iron water main to improve the water supply to the Newtown area.
- We replaced 4.2km of old (unlined cast iron) water mains to improve the quality of the water supplied to residents and businesses in the Miramar and Seatoun areas, and we replaced 1.2km of galvanized iron water mains in various parts of the city as they came up for renewal.
- We are in the process of constructing a 3.5 megalitre water reservoir adjacent to the Mornington Golf Course to improve the water supply to the southern suburbs. The reservoir will be buried so as to fit into the surrounding landscape.
- A new pump station has been built off Westchester Drive. This will ultimately serve the majority of the northern growth area and be complemented by three additional reservoirs.

#### WELLINGTON'S WATER PIPE NETWORK SYSTEM GRADING (AS AT 2005)

GRADING	Bb	Aa	Ba	Bb	Bb	Ba	Bb	Ab	Ba	Ba	Bd
ZONE	Brooklyn	Churton	Johnson ville	Karori	Kelburn	Onslow	Southern Wellington	Tawa	Wadestown	Wellington Central	Eastern Suburbs

Source: Capacity (Wellington Water Management Ltd.) and Regional Public Health

SOURCE AND PLANT GRADES		DISTRIBUTION ZONE GRADES	
A1	Completely satisfactory, negligible level of risk, demonstrably high quality	a1	Completely satisfactory, negligible level of risk, demonstrably high quality
A	Completely satisfactory, extreme low level of risk	a	Completely satisfactory, extreme low level of risk
B	Satisfactory, very low level of risk when the water leaves the treatment plant	b	Satisfactory, very low level of risk
C	Marginally satisfactory, low level of microbiological risk when water leaves the treatment plant, but may not be satisfactory chemically	c	Marginally satisfactory, moderate low risk
D	Unsatisfactory level of risk	d	Unsatisfactory level of risk
E	Unacceptable level of risk	e	Unacceptable level of risk
u	Not yet graded	u	Not yet graded

#### WHAT IT COST

COST OF ACTIVITY \$000	ACTUAL 2006	BUDGET 2006	VARIANCE 2006	ACTUAL 2005
<b>Operational projects</b>				
Expenditure	13,531	11,700	(1,831)	12,689
Revenue	1,394	1,068	326	2,240
Net expenditure	12,137	10,632	(1,505)	10,449
<b>Capital projects</b>				
Expenditure	13,472	13,517	45	12,373

Revenue was higher than budgeted due to the recognition of vested assets and higher than expected user fees. Depreciation expenditure is higher than anticipated due to the revaluation of water assets.

#### HOW WE PERFORMED

##### 1. THE WATER QUALITY OF WELLINGTON'S WATER

Our 2005/06 Annual Plan target was for all water samples to comply with the Drinking Water Standards (2000). This target was achieved with all samples complying with the drinking water standards.

##### 2. WELLINGTON'S WATER PIPE NETWORK SYSTEM GRADING

Grading of the Wellington's water pipe network system was not carried out during the year by Regional Public Health. As such, it is not possible to assess an improvement in our network grading for the year.

It is expected given the significant reservoir and network upgrades undertaken during the year, water quality and water pipe network system problems associated with the Eastern Suburbs zone should have been remedied. (See table to left).

## OUTCOME 6.2

## SUSTAINABILITY

OUR AIM IS FOR WELLINGTON TO USE ENERGY, WATER AND LAND EFFICIENTLY TO ADVANCE ENVIRONMENTAL SUSTAINABILITY.

## OUTCOME INDICATORS

	2004/05	2005/06
Wellington's water use per capita (litres). <sup>1</sup>	165,400	167,126
Ratio of population to land area in Wellington (people per hectare). <sup>2</sup>	6.30	6.38

<sup>1</sup> Source: Capacity (Wellington Water Management Ltd.)

<sup>2</sup> Source: Statistics NZ

## PROGRESS TOWARDS OUR OUTCOME

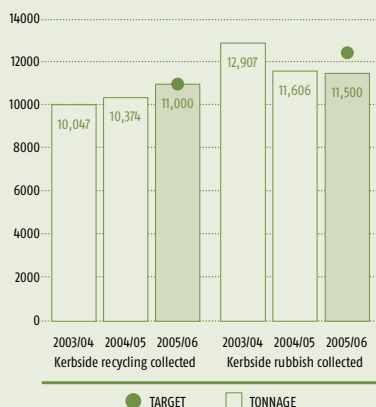
- Water use for each person in the city has increased by one percent.
- Wellington continues to become more densely populated.

## HOW WE PERFORMED

Over the last three years, the amount of kerbside recycling collected has increased by 8.6 percent. Compared to 2004/05 we now collect an additional 943 tonnes per annum.

Our Annual Plan targets were to increase the amount of kerbside recycling to 11,000 tonnes and to keep the amount of kerbside rubbish collected at no more than 12,500 tonnes. Both targets were achieved.

KERBSIDE RECYCLING MEASURED AGAINST RUBBISH COLLECTED (TONNAGE)



Source: CitiOperations Business Unit, Wellington City Council

## 6.2.1 ACTIVITY: WASTE MINIMISATION

We aim to reduce the amount of solid waste the city produces. The waste minimisation budget funds the education of residents about how to produce less rubbish, research about the impact of waste on the city, and planning to reduce waste.

We also aim to further reduce waste by separating green waste at our landfill transfer stations.

## WHAT WE DID

- We completed a physical survey of land-filled waste using the Ministry for the Environment's Solid Waste Analysis Protocol (SWAP) at both our landfills. Our resource consents require us to supply information on waste composition every three years. This information is designed to help waste managers make decisions on waste disposal rates, recycling rates and reduction targets. The previous audit was done in 2002.
- We sought and received funding from the Ministry for the Environment to conduct a pilot of a commercial recycling programme for multi-tenanted and multi-level commercial premises.
- We continued and expanded the popular tours of the Southern Landfill. Aimed at educating and informing the public, these two-hour walks visited the Living Earth compost plant and the United Water dewatering plant.
- We set up and conducted a 'Kai to Compost' kitchen waste trial. The trial is designed to help minimise the city's waste by collecting food scraps from Wellington restaurants and businesses and turning it into compost.

## WHAT IT COST

COST OF ACTIVITY \$000	ACTUAL 2006	BUDGET 2006	VARIANCE 2006	ACTUAL 2005
<b>Operational projects</b>				
Expenditure	330	65	(265)	31
Revenue	434	-	434	-
Net expenditure	(104)	65	169	31
<b>Capital projects</b>				
Expenditure	-	-	-	-

Revenue and expenditure are higher than anticipated due to the construction of dry cells for the disposal of contaminated waste.

### 6.2.2 ACTIVITY: WATER CONSERVATION

We promote water conservation through public education efforts and by installing and reading water meters. The water meters allow us to monitor trends in water consumption and more easily detect leaks. Since customers are charged for water used, the meters also provide an incentive for them to use water efficiently.

Over the next decade, we will continue to install water meters on an area and district basis. Households will be able to choose between having a water meter or continuing to pay for water supply through water rates. Our water network operations (see 6.1.2 Water network) are also focused on conservation.

#### WHAT WE DID

- We advanced plans for the installation of water meters on reservoirs and pump stations to provide real time operational data to assist with water conservation and leak detection. The design work for the installation of the meters has been tendered.
- We worked with the Greater Wellington Regional Council on promoting water conservation to the public through media releases and targeted advertising.

#### WHAT IT COST

COST OF ACTIVITY \$000	ACTUAL 2006	BUDGET 2006	VARIANCE 2006	ACTUAL 2005
<b>Operational projects</b>				
Expenditure	248	375	127	407
Revenue	2	8	(6)	17
Net expenditure	246	367	121	390
<b>Capital projects</b>				
Expenditure	81	397	316	392

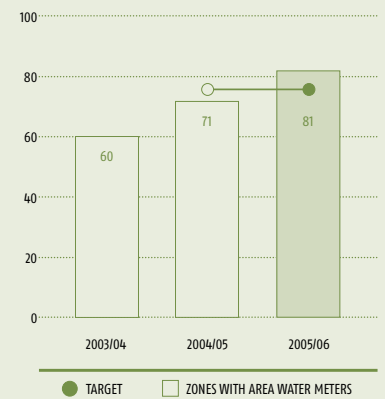
Capital expenditure relating to this activity has been deferred to allow further investigations to be undertaken on the optimum location for the water meters. This underspent budget has not been carried forward as the anticipated future works will be funded from the existing 2006/07 capital budget.

#### HOW WE PERFORMED

Our long-term target for the water network is to install water meters within all zones and sub-zones on an area and district basis, allowing trends in water consumption to be monitored and leaks to be detected more easily.

During the year we installed additional water meters throughout the network, meaning there are now meters in 81 percent of zones that were scheduled for meter installation.

THE NUMBER OF ZONES WITH DISTRICT WATER METERS – MEASURED AGAINST THE TOTAL NUMBER OF METERS REQUIRED



Source: Capacity (Wellington Water Management Ltd.)

### 6.2.3 ACTIVITY: QUARRY OPERATIONS

We operate the Kiwi Point Quarry in Ngauranga Gorge, which provides aggregate to commercial and private operators to be used in roads and other construction works throughout the city. The quarry has held ISO certification since 1996.

#### WHAT WE DID AND HOW WE PERFORMED

- We assisted Living Earth in obtaining resource consent to establish a green waste collection depot at the Kiwi Point Quarry. We also obtained consents for accepting cleanfill. This allows customers to tip on site and also purchase quarry products without also having to visit a landfill.
- We completed new security fencing and signage around our northern boundary.
- We reviewed quarry delivery and product pricing as a result of increased fuel charges.
- We assisted Allied Concrete and Works Infrastructure with planning and development of a new concrete and asphalt plant site.
- An application for resource consent to cover vegetation removal and land development was lodged for the Quarry.
- All our work was carried out in full compliance with our resource consents and our ISO 9001–2000 certificate.

#### WHAT IT COST

COST OF ACTIVITY \$000	ACTUAL 2006	BUDGET 2006	VARIANCE 2006	ACTUAL 2005
<b>Operational projects</b>				
Expenditure	3,914	3,150	(764)	2,962
Revenue	4,477	3,805	672	3,117
Net revenue	(563)	(655)	(92)	(155)
<b>Capital projects</b>				
Expenditure	-	-	-	-

Revenue is ahead of budget due to increased sales. The expenditure variance reflects additional costs incurred in producing the additional saleable product.

OUTCOME 6.3

# REDUCING WASTE

OUR AIM IS TO REDUCE THE AMOUNT OF WASTE THE CITY PRODUCES, BY INCREASING THE AMOUNT THAT IS RE-USED, RECYCLED OR RECOVERED.

PROGRESS TOWARDS OUR OUTCOME

- Overall, the vast majority of residents continue to actively take steps to reduce the amount of waste from their homes.
- The amount of waste entering Wellington’s landfills has reduced from 0.497 tonnes per capita in 2004/05 to 0.432 this year.

OUTCOME INDICATORS

	2005	2006
Residents who are actively taking steps to reduce the amount of waste from their homes – overall (%)	100%	99%
Donating things to second hand stores (%)	88%	88%
Using the green kerbside recycling bins (%)	86%	85%

Source: WCC Resident Satisfaction Survey

## 6.3.1 ACTIVITY: HOUSEHOLD RECYCLING

We encourage householders to recycle by providing kerbside collection services using bins or bags. This activity is carried out in an environment where the total volumes of recycling are increasing significantly.

WHAT WE DID

We remodelled and enhanced the city’s recycling station to improve its capacity to meet growing demand and also to improve safety. The change-over to the new recycling processor went without incident. We have also realigned our fleet and contractors to meet the continued increase in demand for kerbside recycling.

WHAT IT COST

COST OF ACTIVITY \$000	ACTUAL 2006	BUDGET 2006	VARIANCE 2006	ACTUAL 2005
<b>Operational projects</b>				
Expenditure	2,114	1,741	(373)	2,424
Revenue	144	47	97	106
Net expenditure	1,970	1,694	(276)	2,318
<b>Capital projects</b>				
Expenditure	-	-	-	-

Expenditure is above budget due to increased demand for recycling services. An unexpected revenue stream from paper and cardboard collected has partially offset the additional expenditure.

HOW WE PERFORMED

Most Wellington residents continue to make regular use of kerbside recycling services. Comparing the last three years, there has been a 5 percent increase on already high levels of regular kerbside recycling patronage.



Source: WCC Resident Satisfaction Survey

## OUTCOME 6.4

## SUSTAINABLE DISPOSAL

OUR AIM IS TO DISPOSE OF ALL WASTE IN AN ENVIRONMENTALLY-SUSTAINABLE MANNER THAT PROTECTS PEOPLE AND ECOSYSTEMS.

## OUTCOME INDICATORS

	2004/05	2005/06
Wellington freshwater stream quality (measured by macro invertebrate indices MCI – an increase in the MCI represents an improvement in stream quality)		
Makara Stream.	100	94
Karori Stream.	93	109
Kaiwharawhara Stream.	91	88

Source: Greater Wellington Regional Council

	2005	2006
Stormwater pollution awareness – residents who are actively taking steps to reduce storm water pollution – overall (%).	100%	99%
Pouring all household liquid waste down an inside sink, toilet or gulley trap (%).	69%	71%
Dispose of sweepings with household rubbish (%).	66%	66%

Source: WCC Resident Satisfaction Survey

## PROGRESS TOWARDS OUR OUTCOME

- There has been a decline in the water quality of 2 out of 3 freshwater streams that are monitored. Remedying this is one of the key environmental priorities we identified as part of our long term plan. Over the next two years, we will continue with Project Kaiwharawhara working with groups and volunteers to restore its health and environs. We'll then apply those lessons to start restoration of other streams, including Porirua and Owhiro streams.
- Overall similar proportions of residents to last year continue to actively take steps to reduce stormwater pollution.

### 6.4.1 ACTIVITY: STORMWATER COLLECTION/DISPOSAL NETWORK

Wellington's stormwater network protects the city from flooding. Each year, it carries some 79 million cubic metres of runoff from gutters and drains to the harbour and city streams.

The stormwater network is made up of more than 600 kilometres of pipes and tunnels, about half of which are more than 50 years old. Maintenance of the stormwater network includes upgrading and replacing pipes and other infrastructure, and fixing leaks and other faults.

We aim to ensure the network is managed as efficiently and cost-effectively as possible.

Capacity manages the network. It builds new drains and repairs or replaces existing drains as necessary.

Our citywide flood protection plan divides the city into over 30 catchments. Management plans are being developed for each catchment to ensure the stormwater system has sufficient capacity to cope with heavy rain.

#### WHAT WE DID

- We upgraded the stormwater system between The Crescent and Roseneath Tce to reduce local flooding. The sewer pipe was upgraded at the same time. A new \$7 million stormwater culvert in Te Aro was built as part of the Wellington Inner City Bypass project to mitigate flood risk of central Wellington and the Te Aro area.
- The final stage of the central city stormwater project was completed and the entire system was made operational. The two-year stormwater tunnelling project has tripled stormwater capacity in the area, and will greatly reduce the risk of flooding in this part of the city.
- Flood mitigation work was carried out in the Miramar catchment. Flooding in 2004 resulted in a large build up of sediment and gravel in the Miramar culvert. About 250 cubic metres of sediment was removed. Work on drain upgrades and the provision of additional stormwater sumps was also carried out improving stormwater capacity and reducing the risk of flooding.
- New drains and sumps were also installed in Karori Road to fix long-standing flooding problems in the town centre.

#### WHAT IT COST

COST OF ACTIVITY \$000	ACTUAL 2006	BUDGET 2006	VARIANCE 2006	ACTUAL 2005
<b>Operational projects</b>				
Expenditure	11,064	10,330	(734)	10,333
Revenue	1,102	207	895	1,789
Net expenditure	9,962	10,123	161	8,544
<b>Capital projects</b>				
Expenditure	5,376	5,395	19	8,435

Expenditure reflects additional depreciation resulting from the revaluation of stormwater assets. The revenue variance arises due to the recognition of vested assets.

#### HOW WE PERFORMED

Results for the year show a notable increase (10 percent) in the percentage of residents that were satisfied with stormwater collection and service.

One reason for the increase in resident satisfaction may be the completion of a number of major stormwater projects in recent years, particularly the central city stormwater project.



Source: WCC Resident Satisfaction Survey

## 6.4.2 ACTIVITY: STORMWATER MANAGEMENT

Because stormwater is discharged into the city's streams, harbour and coastal waters, it needs to be as clean as possible. Stormwater can be contaminated by runoff from roads, and by waste such as oil, paint, litter and detergents being tipped or washing into drains. In the last 10 years we have substantially eliminated sewage from the stormwater system (see 6.4.3 Sewage collection/disposal network).

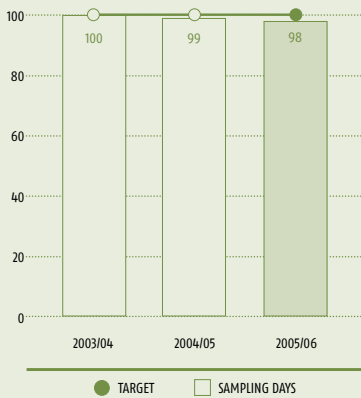
We have resource consents from the Greater Wellington Regional Council for our stormwater discharges, and we are required to meet the standards set out in these consents.

### HOW WE PERFORMED

We carry out sampling at 39 sites around the city four times a year. In 2005/06, all samples were free of contaminants on 98 percent of sampling days. This result did not meet our Annual Report target of 100 percent.

Heavy rainfall experienced in the city during the later part of 2005/06 is likely to have contributed to underachievement in this area. Increased occurrence of sample contaminants are typically related to faecal matter from animals, litter, pollution and decaying vegetation flushed into the stormwater system during rainfall events.

SAMPLING DAYS WHEN THE FOLLOWING CONTAMINANTS ARE NOT SEEN: SCUMS OR FOAMS, FLOATING OR SUSPENDED MATERIAL, ABNORMAL COLOUR OR CLARITY, FATS OR GROSS SOLIDS



Source: Capacity (Wellington Water Management Ltd)

### WHAT WE DID

- We are working with Greater Wellington to educate residents about the importance of keeping contaminants out of the stormwater network, and also to quantify the effects of stormwater runoff on the city's waterways.
- We monitor stormwater quality at 39 sites – in streams, the harbour, the south coast, and in stormwater drains – to ensure it meets the required standards.

### WHAT IT COST

COST OF ACTIVITY \$000	ACTUAL 2006	BUDGET 2006	VARIANCE 2006	ACTUAL 2005
<b>Operational projects</b>				
Expenditure	157	168	11	130
Revenue	11	2	9	15
Net expenditure	146	166	20	115
<b>Capital projects</b>				
Expenditure	-	-	-	-

### 6.4.3 ACTIVITY: SEWAGE COLLECTION/DISPOSAL NETWORK

We own more than 1,000 kilometres of sewer pipes and tunnels, and more than 60 pumping stations.

Capacity manages the network. Management and maintenance work also includes upgrading sewer pipes that are too small or leak sewage, flushing drains, finding and fixing leaks, and carrying out works to ensure sewage doesn't contaminate the stormwater network.

We also inspect private properties to find cross-connections between the sewerage and stormwater networks and require landowners to remove those connections.

We monitor and regulate trade wastes (such as oil, grease, chemicals, and septic tank contents) to ensure that harmful substances don't enter the sewerage system. If they were allowed to enter the sewerage system, trade wastes could corrode pipes, block sewers, damage treatment stations, pollute waterways, and contaminate the sewage sludge used for Living Earth Ltd's compost-making operation (see 6.4.4 Sewage treatment).

#### WHAT WE DID

- We installed a 300,000 litre pump station storage tank in Rongotai. The pump station storage tank is being installed as part of our ongoing work to minimise the risk of discharges of sewage into the stormwater system, and ultimately to the coast, during emergency situations. We also installed a new sewage pump station in Waripori Street, Newtown. The new pump station will divert sewage away from the old brick tunnel under what was formerly Athletic Park.
- An Inflow and Infiltration Management Plan was completed for the Moa Point wastewater catchment.
- We approved an amendment to the lateral policy that outlines the Council's stance on reimbursing repair costs of private lower laterals to property owners.

#### WHAT IT COST

COST OF ACTIVITY \$000	ACTUAL 2006	BUDGET 2006	VARIANCE 2006	ACTUAL 2005
<b>Operational projects</b>				
Expenditure	13,684	13,907	223	13,894
Revenue	802	1,021	(219)	1,191
Net expenditure	12,882	12,886	4	12,703
<b>Capital projects</b>				
Expenditure	8,371	9,317	946	6,813

The capital expenditure underspend is due to poor weather and contractor and material shortages. This underspent budget has not been carried forward as the anticipated future works will be funded from the existing 2006/07 capital budget.

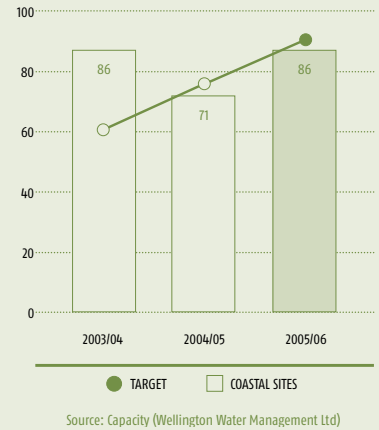
#### HOW WE PERFORMED

During the year a number of sites that we monitor failed to meet their Annual Plan targets for acceptable performance.

Heavy rainfall experienced in city during the later part of 2005/06 is likely to have contributed to underachievement in

this area. Increased occurrence of sample contaminants are typically related to faecal matter from animals, litter, pollution and decaying vegetation flushed into the stormwater system during rainfall events.

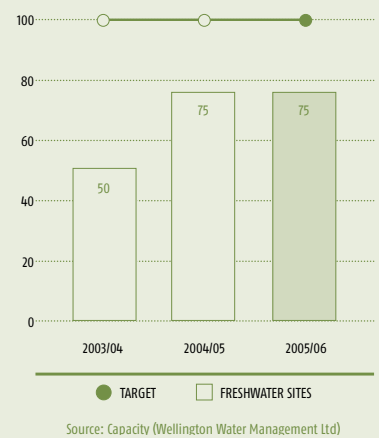
1. MONITORED COASTAL SITES WHERE THE MEDIAN ANNUAL LEVEL OF FAECAL COLIFORM BACTERIA COUNTS ARE LESS THAN 2000 PER 100ML (%)



2. MONITORED BATHING BEACHES WHERE THE MEDIAN ANNUAL ENTEROCOCCI BACTERIA COUNTS ARE LESS THAN 35 PER 100ML (%)



3. MONITORED FRESHWATER SITES WHERE THE ANNUAL MEDIAN FAECAL COLIFORM BACTERIA COUNTS ARE LESS THAN 2000 PER 100ML (%)



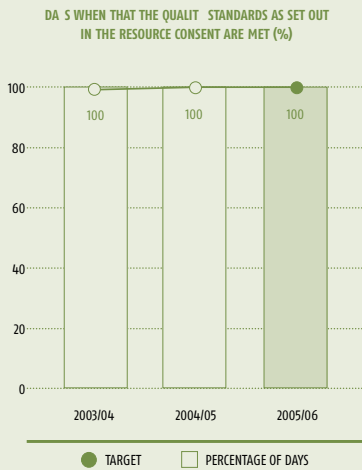
### 6.4.4 ACTIVITY: SEWAGE TREATMENT

Sewage is treated at three plants: Moa Point, Karori, and Porirua. The wastewater treatment plants at Moa Point and Karori are financed by the Council and operated by United Water. Sewage from Wellington’s northern suburbs flows to the Porirua plant, in which the Council has a 27.6 percent stake and the Porirua City Council has the remaining share.

Once sewage is treated at Moa Point and Karori, the treated effluent is piped into Cook Strait and the sludge is taken to the Southern Landfill, where it is combined with green waste to make high-quality compost. This work is carried out by Living Earth Ltd under contract to the Council.

#### HOW WE PERFORMED

We have continued recent strong performance under this activity by maintaining standards as set out in our resource consent on all occasions during the year. This result met our Annual Plan target.



Source: Capacity (Wellington Water Management Ltd) and Greater Wellington Regional Council

#### WHAT WE DID

- The Moa Point and Karori plants continued to treat sewage to stringent standards, meaning treated effluent discharges did not harm beaches and waterways and other recreational areas.

#### WHAT IT COST

COST OF ACTIVITY \$000	ACTUAL 2006	BUDGET 2006	VARIANCE 2006	ACTUAL 2005
<b>Operational projects</b>				
Expenditure	19,312	19,000	(312)	20,392
Revenue	1,808	932	876	2,215
Net expenditure	17,504	18,068	564	18,177
<b>Capital projects</b>				
Expenditure	-	-	-	-

Expenditure is above budget due to increased depreciation, and increased costs from operating the Clearwater waste treatment facility. Additional revenue has been generated from the Council’s share of the Porirua Sewerage Treatment Plant and the on-sale of higher than anticipated sludge volumes at Clearwater.

### 6.4.5 ACTIVITY: SOLID WASTE COLLECTION

We collect rubbish from Wellington households and businesses and dispose of it at the landfills. The cost of this programme is offset by the sale of Council rubbish bags.

We also collect household hazardous wastes such as paint, batteries, gas bottles, chemicals, oil and solvents. These are sent for safe disposal, ensuring they don't contaminate landfills or waterways.

#### WHAT WE DID

- The fee for backdoor refuse collection was reviewed and increased. The new fee better reflected the actual cost of collection.
- A total of 11,500 tonnes of rubbish was collected – down from 11,606 tonnes in 2004/05.

#### WHAT IT COST

COST OF ACTIVITY \$000	ACTUAL 2006	BUDGET 2006	VARIANCE 2006	ACTUAL 2005
<b>Operational projects</b>				
Expenditure	3,629	3,397	(232)	3,291
Revenue	3,067	3,167	(100)	2,895
Net expenditure	562	230	(332)	396
<b>Capital projects</b>				
Expenditure	-	-	-	-

Unanticipated plant maintenance along with higher fuel and running costs have resulted in additional expenditure being incurred.

#### HOW WE PERFORMED

##### FREQUENCY OF RUBBISH COLLECTION FOR DOMESTIC, INNER-CITY AND COMMERCIAL COLLECTIONS AND THE PROVISION OF HAZARDOUS WASTE COLLECTION FACILITIES

Our 2005/06 Annual Plan targets were:

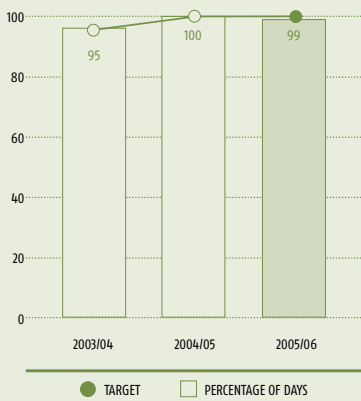
- (i) for rubbish collections to be maintained at the same frequency as the previous years – domestic and commercial collections weekly and inner city collections six days a week – and
- (ii) for all (100 percent) hazardous domestic waste received at hazardous waste facility to be recovered. All of these targets were achieved.

**HOW WE PERFORMED**

Our Southern and Northern Landfills were monitored against the quality standards set out in our resource consents. Our Annual Plan target was for resource consent conditions to be met on all occasions (100 percent). This target was not achieved following a one-off breach of consent conditions at the Northern Landfill. This non-compliance event was remedied immediately. This event meant we met our compliance requirements for 364 days of the year.

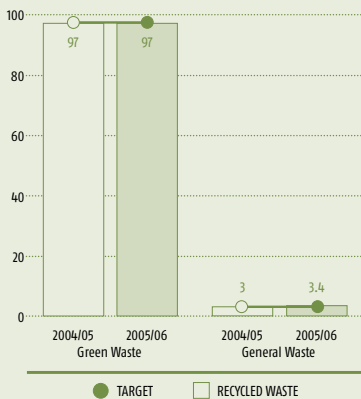
We also monitor the amount of waste received at the transfer station that we recycle. During the year, 97 percent of green waste and 3.4 percent of general waste received at the transfer station was recycled. Both targets met our Annual Plan targets.

1. DAYS THAT THE QUALITY STANDARDS SET OUT IN THE RESOURCE CONSENTS ARE MET (%)



Source: Greater Wellington Regional Council (resource consents) and CitiOperations Business Unit, Wellington City Council

2 & 3. GENERAL WASTE AND GREEN WASTE RECEIVED AT THE TRANSFER STATION THAT IS RECYCLED (%)



Source: Greater Wellington Regional Council (resource consents) and CitiOperations Business Unit, Wellington City Council

**6.4.6 ACTIVITY: SOLID WASTE LANDFILLS**

We operated the Southern and Northern landfills during the year. As well as the day-to-day management of the landfills, we are involved in landscaping, erosion control, resource consent compliance and water quality monitoring. Costs are recovered through user charges.

Both landfills operated transfer stations (see activity 6.3.1), where domestic waste was dumped and recyclables separated.

The Southern Landfill also operates the Second Treasure Shop where items such as furniture, metals, bikes, books and appliances can be dropped off. Costs are recovered by on-selling recyclable and re-usable items.

**MILESTONE**

The Northern Landfill, operating since 1994 north of Johnsonville reached capacity earlier this year and was closed. The 4.5ha site was leased by the Council from Lincolnshire Farms Ltd and will now revert to its owners.

The Southern Landfill has between 100 and 150 years worth of capacity – longer if the Council can reduce the amount of waste being dumped. People can also dispose of rubbish at the Spicer Landfill in Porirua.

**WHAT IT COST**

COST OF ACTIVITY \$000	ACTUAL 2006	BUDGET 2006	VARIANCE 2006	ACTUAL 2005
<b>Operational projects</b>				
Expenditure	3,547	3,762	215	3,111
Revenue	6,105	5,535	570	6,803
Net revenue	(2,558)	(1,773)	785	(3,692)
<b>Capital projects</b>				
Expenditure	443	443	-	1,273

Management fees paid to Living Earth are under budget as the volume of green waste received was lower than expected. Revenue is above budget due to the extension of capacity in the Northern Landfill prior to closure.

### 6.4.7 ACTIVITY: CLOSED SITES AFTERCARE

With the closure of the Northern Landfill there are now 33 closed landfills in the city, most of which are now reserves or parks.

We monitor them to ensure they aren't discharging hazardous gas (such as methane and carbon monoxide)

or leachate into the environment. We have a gas extraction plant at the Southgate Landfill and gas control measures at Preston's Gully and Ian Galloway Park.

#### WHAT WE DID

- We identified the need for remediation earthworks at four sites. We have concluded remedial work at two sites, and work is currently underway at the other two.
- We completed plans for the second stage of the closed landfills programme for the assessment of soil and leachate.

#### WHAT IT COST

COST OF ACTIVITY \$000	ACTUAL 2006	BUDGET 2006	VARIANCE 2006	ACTUAL 2005
<b>Operational projects</b>				
Expenditure	1,154	939	(215)	1,012
Revenue	1	2	(1)	8
Net expenditure	1,153	937	(216)	1,004
<b>Capital projects</b>				
Expenditure	-	-	-	1

Expenditure is over budget due to a recalculation of the cost and scope of works required for closed landfills.

#### HOW WE PERFORMED

##### THE PERCENTAGE OF KNOWN CLOSED LANDFILLS THAT HAVE WATER QUALITY AND GAS MONITORING SYSTEMS

Our 2005/06 Annual Plan target was for all (100 percent) known closed landfills, that have been investigated and require water quality and/or gas monitoring systems to be put in place, have such systems in place. Both targets were achieved. During the year, gas monitoring programmes were maintained in all closed landfills identified as needing them.

As part of a three-year identification programme, eight closed landfills have so far been identified as requiring water monitoring programmes and these have been successfully implemented.

Source: CitiOperations Business Unit, Wellington City Council