

Environment

At a glance

OUR AIM Protecting and enhancing Wellington's natural environment.

LEGAL REQUIREMENTS Local Government Act 2002 – support environmental, social and economic well-being now and into the future; ensure ongoing provision of water, wastewater and stormwater services and ensure they are adequate to meet the city's needs.

Reserves Act 1977 – administering public reserves and preparing reserve management plans.

Resource Management Act 1991 – comply with resource consents on activities such as landfills, sewerage, and quarry.

Waste Minimisation Act 2008 – promote effective and efficient waste management and minimisation.

OUTCOMES More sustainable. Safer. Healthier. More liveable. More competitive. Better connected. More actively engaged. Stronger sense of place.

CHALLENGES

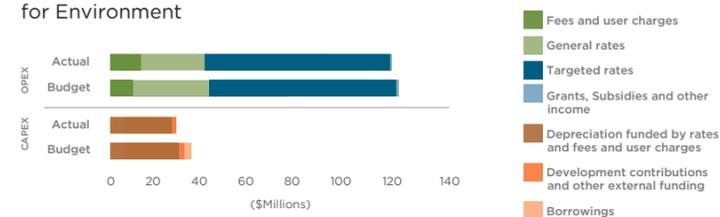
- Protecting biodiversity and managing pest plants and animals.
- Reducing or offsetting greenhouse gas emissions.
- Encouraging efficient use of resources such as water and energy.
- Continuing to reduce the amount of solid waste the city produces.

STRATEGIC APPROACH

- Protect sensitive natural areas and resources.
- Reduce the city's greenhouse gas emissions; reduce resource use and convert to renewable energy.
- Minimise the impact of resource use, including development, on landscapes and ecosystems.
- Dispose of waste in ways that protect the environment and encourage recycling.
- Provide high quality, accessible green spaces.

See 'progress against strategic priorities' for the key initiatives we are taking to meet these goals.

COST 2009/10 Expenditure and funding (actual and budget) for Environment



IN THIS SECTION

- 2.1 Gardens and beaches
- 2.2 Green open spaces
- 2.3 Water
- 2.4 Wastewater and stormwater
- 2.5 Waste reduction and energy conservation
- 2.6 Environmental conservation attractions
- 2.7 Quarry

We aim to protect and enhance Wellington's natural environment.

State of the city

Wellington is one of the greenest capital cities in the world.

The city's total land area is just under 290 square kilometres. Of that, just over 40 square kilometres is protected in the Town Belt and other reserves. We manage this land to maintain its conservation value as well as providing space for outdoor recreation such as walking and mountain biking.

We also support Zealandia – the Karori Sanctuary and the Wellington Zoo, which together attracted almost a quarter of a million visitors during the year. Along with other facilities such as Otari-Wilton's Bush and Te Papa, they form part of a cluster of city attractions based on nature and science.

Wellington was recognised as the world's 5th greenest city in the 2010 Mercer Quality of Living Survey's list of eco-cities.

Like all cities, we face challenges in reducing waste and minimising harm to the environment.

We aim to make Wellington a sustainable city, which means reducing impacts on the environment from use of resources such as land, water and energy. Environmental impacts range from pollution of land, air and water to release of greenhouse gases which contribute to climate change.

Water use has declined in recent years, from 161,234 litres per person in 2007/08 to 149,025 litres in 2008/09 (this includes both residential and commercial water use).

Energy use per person increased from 6.6 MWh per person in 2007/08 (March year) to 7.2 MWh/person in 2009/10.

The amount of waste dumped in the city's landfills declined a little during the year to 0.41 tonnes per person (from 0.42 tonnes in 2008/09) but remained higher than in 2007/08 (0.36 tonnes).

The environment is the biggest area of Council activity.

The environment is our biggest area of spending, both in terms of operational spending and capital works. Our work includes waste minimisation, energy efficiency, providing water supply, managing wastewater and stormwater to protect people and the environment from harm, and protecting and managing the city's parks, reserves and coastline.

Our strategic focus centres on minimising harm while protecting and enhancing those areas of the city that are important to the city's ecology and unique character.

Climate change at copenhagen: cities act

Climate change is a global issue that requires Wellington city to act.

In December 2009, a Council led delegation visited Copenhagen to take part in a global Mayoral summit on climate change.

A key message from the summit was that city leaders cannot wait for the world's governments to take meaningful action to reduce greenhouse gas emissions and prevent the worst impacts of climate change. Rather, cities must act.

While world leaders struggle to agree on a new climate treaty, cities and local communities can lead efforts to reduce energy use and make the transition to a lower carbon economy.

In Wellington, our response to climate change has been multi-faceted. A new Climate Change Action Plan adopted in 2010 focuses on mitigating climate change, and also preparing the city to adapt to its impacts.

The plan reinforced our target of cutting city-wide emissions by 30% (from 2001 levels) by 2020 and 80% by 2050. Our targets are far more ambitious than national goals, but are in line with scientific evidence of the changes needed to prevent runaway increases in global temperatures.

Council actions include:

- facilitating renewable energy sources such as wind farms
- focusing development in key transport and employment hubs to reduce the need to travel
- supporting a modern, convenient public transport system – as well as walking and cycling – as alternatives to private vehicles
- supporting efforts to reduce business emissions and make the city's homes more energy efficient through insulation, efficient heating, and other means such as installation of solar water heaters.

And, in 2010, we are working on the feasibility of having electric vehicles on the city's streets.

Our adaptation work includes assessments of the city's vulnerability to sea level rises. We have already started making changes to our stormwater system to ensure they can cope.

Climate change is a complex issue, with no single solution – but, rather, a wide range of solutions and actions at global, national and community levels. Wellington, and other cities like us, are crucial to the response, because we can act quickly, and work in partnership with individuals, businesses, government agencies, and others who have roles to play in responding to the planet's biggest environmental issue.

For more on climate change initiatives, see 2.5 Energy Efficiency and Waste Minimisation.

Progress against strategic priorities

Our 2009-19 long-term plan identified the following three strategic priorities for the period to 2012.

Managing demand for potable water and developing a region-wide water management plan.

We completed a draft Water Conservation and Efficiency Plan, to go out for public consultation during 2010/11 (see 'In Focus', page 33). We also installed area meters in some locations to improve monitoring of water use and help us detect leaks.

Taking steps to reduce the organisation's – and the city's – greenhouse gas emissions.

We took several steps to reduce greenhouse gas emissions, both Council and city-wide – for example, through supporting the eMission programme which aims to reduce business energy use, and supporting initiatives to promote better insulation and more efficient heating sources for the city's homes. Following extensive consultation, the Council approved a new Climate Change Action Plan in June 2010. Our initiatives are detailed in 2.5 Waste Reduction and Energy Conservation, page 41.

Encouraging people and businesses to reduce the amount of waste they produce.

We encourage waste reduction through recycling programmes. During the year, the Council approved the adoption of recycling wheelie-bins, which are expected to significantly increase the amount of recycling collected. See 2.5 Waste Reduction and Energy Conservation, page 41, for more information.

Developing a strategic framework for green open spaces.

We worked with the Wellington Regional Council and other territorial authorities to develop a Wellington Regional Open Spaces strategy and work plan, aimed at ensuring a coordinated approach to development and protection of open spaces.

Outcomes

Our long-term outcomes (i.e. aspirations) for the city's environment:

- **MORE LIVEABLE:** Wellington will provide a wide range of social and recreation opportunities that don't compromise environmental values.
- **MORE COMPETITIVE:** Wellington's high quality natural environment will attract visitors, residents and businesses.
- **BETTER CONNECTED:** A network of green spaces and corridors will link the coast and bush areas.
- **MORE ACTIVELY ENGAGED:** The community will feel a sense of kaitiakitanga/guardianship over the natural environment.
- **MORE SUSTAINABLE:** The city will reduce its impact on the environment through more efficient use of energy, water, land and other resources, and by minimising waste.
- **SAFER:** Wellington's water will be safe to drink, its air safe to breath, and waste will be disposed of in ways that minimise harm.
- **HEALTHIER:** Natural ecosystems will be restored so there are healthy habitats for indigenous and non-indigenous plants and animals.
- **STRONGER SENSE OF PLACE:** Wellington will value and protect the city's natural heritage.

2.1 GARDENS AND BEACHES

We aim to care for the city's gardens and beaches in ways that balance nature with opportunities for enjoyment.

This activity includes:

- **Local parks and open spaces** - We manage and maintain the city's parks and open spaces, along with buildings and other assets.
- **Botanic gardens** - We manage and maintain the city's four botanic gardens: Wellington Botanic Garden, Otari-Wilton's Bush, Bolton Street Memorial Park and Truby King Park.
- **Beaches and coastal operations** - We manage and maintain the city's beaches and coastal areas.

KEY PROJECTS

Beaches and coastline

- Restoration of Te Raekaihau Point on the south coast got underway. This project includes restorative planting, safer vehicle entry points, and more controlled parking to ensure that vehicles don't park on sensitive areas. Work will continue during 2010/11.
- We upgraded the Evans Bay seawalls. The Evans Bay Patent Slip was decommissioned and is due for demolition in 2011/12.
- The Council handed ownership of the fire-damaged Maranui Surf Club building to the club, along with \$350,000 towards the cost of repairs. This decision followed consultation on the future of the building and other surf club buildings in Lyall Bay. The club and popular café have reopened.

Botanic gardens

- We started reconstruction of the Botanic Garden Nursery, which provides plants for the Begonia House and garden collections. This will be completed in 2010/11.
- The gardens held several successful events including Spring Festival, Otari Open Day, Festival of Roses and the annual Rose Pruning Day.
- We completed track upgrades and safety barriers at Otari-Wilton's Bush, and began public consultation on the Otari-Wilton's Bush landscape development plan. The Otari-Wilton's Bush visitor centre will be upgraded in coming years as the plan is implemented.
- We installed the sculptures *Green Islands* by Regan Gentry in the Wellington Botanic Garden, and new interpretive signage in the Botanic Garden and at Otari-Wilton's Bush.

Parks

We completed consultation on the development of the parks network in Newlands, Paparangi, Woodridge and Grenada Village.

OUTCOMES

This activity contributes to the following outcomes: more liveable; stronger sense of place. Being 'liveable' refers to residents having access to recreation opportunities in the natural environment. Having a 'stronger sense of place' refers to protection of the city's natural heritage such as the Town Belt and coastline.

In 2009/10, the city had 4,078 hectares of open space land (209 square metres per person). This was an increase from 3,535 hectares (about 184 sqm per person) in 2008/09. Though there have been some land purchases, the increase is largely because measurement has become more precise.

According to our 2010 Residents' Satisfaction Survey, most residents (84%) believe the city's natural environment is appropriately valued and protected. This is an improvement from 2009 (82%) and 2008 (75%).

In the same survey, more than a third of residents (37%) visit the city's open spaces at least once a month. This is a small decline from previous years (43% in 2009 and 41% in 2008), possibly reflecting poor weather during the year. The proportion who had not visited open space land in the previous 12 months increased from 24% in 2009 to 31% in 2010.

WHAT IT COST

	ACTUAL 2010	BUDGET 2010	VARIANCE 2010	ACTUAL 2009
OPERATING EXPENDITURE (\$000)				
2.1.1 Local Parks and Open Spaces¹				
Expenditure	7,503	7,863	360	7,037
Revenue	(509)	(425)	84	(430)
Net Expenditure	6,994	7,438	444	6,607
2.1.2 Botanical Gardens				
Expenditure	4,146	4,192	46	4,091
Revenue	(380)	(415)	(35)	(491)
Net Expenditure	3,766	3,777	11	3,600
2.1.3 Beaches and Coast Operations				
Expenditure	1,033	1,139	106	947
Revenue	(50)	(51)	(1)	(69)
Net Expenditure	983	1,088	105	878
CAPITAL EXPENDITURE (\$000)				
2.1.1 Local Parks and Open Spaces				
Expenditure	1,095	1,075	(20)	539
Unspent portion of budget to be carried forward	N/A	85	-	N/A
2.1.2 Botanical Gardens				
Expenditure	1,093	1,047	(46)	447
2.1.3 Beaches and Coast Operations²				
Expenditure	618	620	2	206
Unspent portion of budget to be carried forward	N/A	190	-	N/A

¹ Local Parks and Open Spaces operating revenue is over budget due to funding being received for unbudgeted slip repairs. Operating expenditure is under budget due to lower than budgeted depreciation costs.

² Capital works on the Te Raekaihau Point restoration project have been delayed due to poor weather.

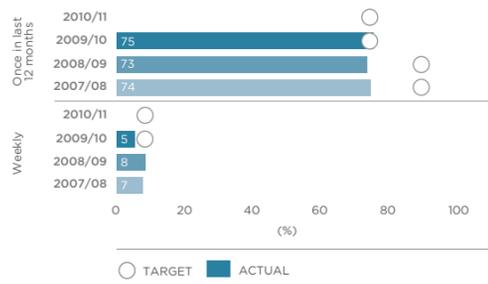
Funding note: Operating expenditure in this activity is funded from general rates, with a small contribution from user charges (mainly from leases/rents on premises such as park pavilions, surf club buildings, and shops and other premises in the botanical gardens).

HOW WE PERFORMED

We aim to ensure that the city's parks, gardens, beaches and coastlines are attractive and accessible, while balancing ecological needs and protection of Wellington's unique natural environment. High levels of resident satisfaction with quality and maintenance of gardens and beaches indicates our success in this area.

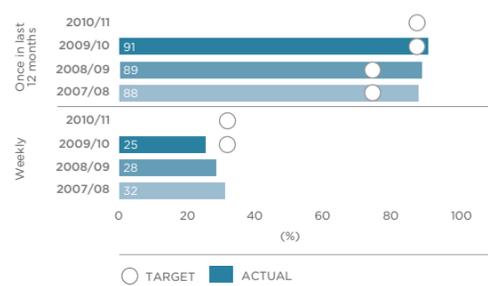
Other indicators of success include: completion of maintenance programmes on schedule during the year; compliance with resource consent conditions for Oriental Bay beaches and structures; and compliance with quality standards for botanic garden plants and for mowing sites.

Residents (%) usage of the Botanic Gardens



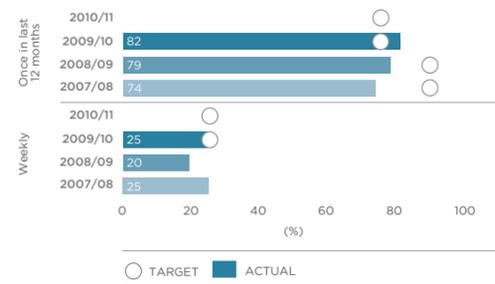
Source: WCC Residents' Satisfaction Survey 2010.

Residents (%) usage of beaches and coastal areas



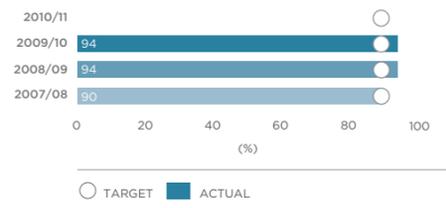
Source: WCC Residents' Satisfaction Survey 2010.

Residents (%) usage of Wellington City Council parks



Source: WCC Residents' Satisfaction Survey 2010.

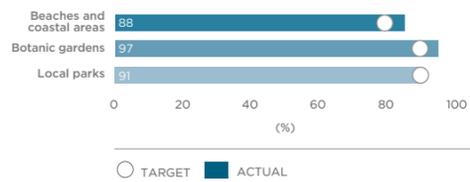
Botanic Gardens' plant collection (%) compliance with quality standards



This measure includes the Wellington Botanic Garden, Truby King and Bolton Street Memorial Park. Otari-Wilton's Bush compliance is 95%. Criteria include plant health, presence of weeds, pruning, and general presentation.

Source: WCC Parks and Gardens.

Residents' (%) satisfaction with the quality and maintenance of gardens and beaches



Source: WCC Residents' Satisfaction Survey 2010.

Residents' (%) ratings of ease of access to local gardens and beach areas

Result: beaches and coastal areas 91% (target: 90%); local park 93% (target: 90%).

Source: WCC Residents' Satisfaction Survey 2010.

Residents (%) who agree that gardens and beaches provide good value for money

Result: 88% (target: 90%).

Source: WCC Residents' Satisfaction Survey 2010.

Beaches areas (%) compliance with quality performance standards

Result: 93% (target: 90%). Quality performance standards cover maintenance, including litter, boat ramp spraying, hard surface spraying, and removing sand build-up from sea walls.

Source: WCC Parks and Gardens.

City mowing sites (%) compliance with quality performance standards

Result: 89% (target: 90%). Quality performance standards include grass length and health.

Source: WCC Parks and Gardens.

Reported hazards (%) that are made safe (or secured) within 24 hours

Result: 100% (target: 100%).

Source: WCC Parks and Gardens.



2.2 GREEN OPEN SPACES



We aim to care for the city's green open spaces in ways that balance nature with opportunities for enjoyment. Key challenges include improving the ecosystems of streams and other waterways, and getting on top of pests and weeds which can strangle native plants and cause harm to human health and safety.

Our activities under this area include:

- **Town belts** - Wellington has more than 40 square kilometres of Town Belt, Outer Green Belt and other reserve land. We manage and maintain these areas for the benefit of present and future generations.
- **Community environmental initiatives** - We provide grants for community projects that benefit the city's environment, and we support volunteers from community groups, schools and other organisations who work to maintain and improve the city's parks and open spaces.
- **Walkways** - We manage and maintain the 337km of tracks and walkways on open space land throughout the city to provide residents with safe access for recreation and leisure opportunities.
- **Stream protection** - We work with community groups to restore and protect the city's streams and surrounding areas.
- **Pest plant and animal management** - We protect native ecosystems by controlling weeds and pest animals at high priority sites.
- **Roadside vegetation** - We plant and maintain the roadside reserve (the strip of land between a private property boundary and a road), and support volunteer groups and individuals who want to beautify these areas.

One-eighth of Wellington's area is reserve land, much of it rugged and covered in native bush. It is a key feature of the Wellington landscape, which contributes to the city's unique identity and helps set it apart from other cities not only in New Zealand but around the world.

This point of difference benefits the economic well-being of the city - attracting tourists and encouraging prospective citizens. It also provides unrivalled opportunities, within minutes of downtown, for outdoor recreation and leisure activities that provide enjoyment and health benefits.

KEY PROJECTS

- We upgraded tracks through Khandallah Park (Northern Walkway), part of the City to Sea walkway from Berhampore Golf Course to Quebec Street, and the Zealandia fence line track. We also assisted with a number of community projects, including new tracks built by volunteers through George Denton and Waimapihi Parks, Makara Peak tracks, Centennial Reserve and Te Kopahou.
- Key reserve upgrades this year were the completion of the traffic management and pedestrian refuges around Mt Victoria lookout, and the development of a new viewing platform off Orangi Kaupapa Rd at Te Ahumairangi Hill (Tinakori Hill) as part of the landscape development plan for that area.
- As part of implementation of our Biodiversity Action Plan we established weed control programmes at 11 new sites, well in excess of our target of three.
- We worked with the Wellington Regional Council and other territorial authorities to develop a Wellington Regional Open Spaces strategy and work plan, aimed at ensuring a coordinated approach to development and protection of open spaces.

OUTCOMES

This activity contributes to the following outcomes: better connected; more actively engaged; healthier.

'Better connected' refers to the city having a network of green spaces linking bush and coastal areas. The city has 337km of maintained tracks and walkways on park and reserve land.

'More actively engaged' refers to community involvement in and kaitiakitanga/guardianship over the natural environment. During the year, volunteers worked an estimated 25,000 hours on the city's park and reserve land, building over 5km of walking tracks.

'Healthier' refers to restoration of natural ecosystems. We measure progress by counting native bird numbers at selected sites throughout the city. While it is difficult to generalise, for most species counted it appears that numbers are increasing.

WHAT IT COST

	ACTUAL 2010	BUDGET 2010	VARIANCE 2010	ACTUAL 2009
OPERATING EXPENDITURE (\$000)				
2.2.1 Road Open Spaces				
Expenditure	8,292	8,106	(186)	8,393
Revenue	(734)	(577)	157	(597)
Net Expenditure	7,558	7,529	(29)	7,796
2.2.2 Town Belts¹				
Expenditure	4,148	4,365	217	4,047
Revenue	(491)	(221)	270	(1,233)
Net Expenditure	3,657	4,144	487	2,814
2.2.3 Community Environmental Initiatives				
Expenditure	408	422	14	334
Revenue	(10)	-	10	-
Net Expenditure	398	422	24	334
2.2.4 Walkways				
Expenditure	447	422	(25)	366
Revenue	(11)	-	11	-
Net Expenditure	436	422	(14)	366
2.2.6 Pest Plant and Animal Management				
Expenditure	898	971	73	855
Revenue	-	-	-	(2)
Net Expenditure	898	971	73	853
CAPITAL EXPENDITURE (\$000)				
2.2.2 Town Belts				
Expenditure	510	533	23	904
Unspent portion of budget to be carried forward	N/A	20	-	N/A
2.2.4 Walkways				
Expenditure	327	328	1	422

¹ Town Belts operating revenue is over budget due to the recognition of unbudgeted vested asset income.

Funding note: Community environmental initiatives are funded from the residential targeted rate. Other projects under this activity are funded mainly from general rates, with a small contribution of other income (rent on Town Belt buildings such as scout clubs, and income from Land Transport New Zealand for maintenance of the transport network under the roads open spaces project).

HOW WE PERFORMED

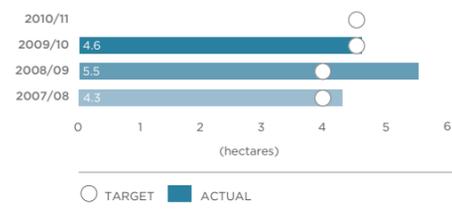
We aim to ensure that the city's green open spaces (town belts, the outer green belt and other reserve land), walking tracks, residential streets and roadside verges are attractive, accessible and safe, while balancing ecological needs. Residents' high rates of satisfaction with the quality and maintenance of green open spaces and our restorative planting activities demonstrate our success in this area.

Residents (%) usage of town belts



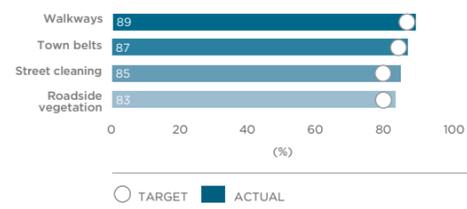
Source: WCC Residents' Satisfaction Survey 2010.

Total area of restorative planting (hectares) along the Town Belt



Source: WCC Parks and Gardens

Residents' (%) satisfaction with the quality and maintenance of green open spaces



Source: WCC Residents' Satisfaction Survey 2010.

Residents' (%) agreement that green open spaces provide good value for money

Result: 88% (target: 90%)

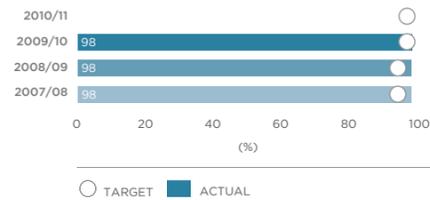
Source: WCC Residents' Satisfaction Survey 2010.

Residents' (%) ratings of ease of access to green open spaces

Result: 94% (target: 90%).

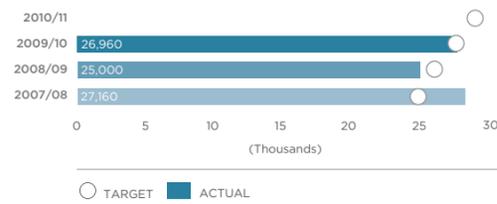
Source: WCC Residents' Satisfaction Survey 2010.

Street cleaning (%) compliance with quality performance standards



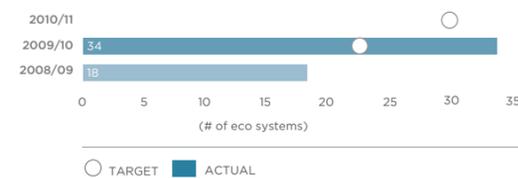
Source: WCC CitiOperations.

Number of Wellington City Council supported planting activities by community groups



Source: WCC Parks and Gardens.

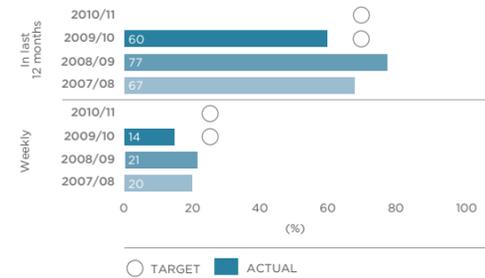
'Key native ecosystems' with operational pest management plans



A 'key native ecosystem' is an ecosystem that is exceptionally important in terms of ecological value and/or diversity of plant life and wildlife.

Source: WCC Parks and Gardens.

Residents (%) usage of WCC walkways



Source: WCC Residents' Satisfaction Survey 2010.

Walkways (%) - compliance with national standards

Result: 91% of primary walkways and tracks were compliant with national standards (target: 100%). The standards cover a range of criteria including integrity of structures and maintenance. This is the first year we have reported on this measure.

Source: WCC Parks and Gardens.

Reported hazards (%) that are made safe (or secured) within 24 hours

Result: 100% (target: 100%). (This is the same measure as recorded in 2.1 Gardens and Beaches).

Source: WCC Parks and Gardens.

Environmental grants

There are no performance targets for this measure. We aim to support initiatives that contribute to environmental well-being in line with eligibility criteria (available at www.Wellington.govt.nz/services/grants).

ENVIRONMENTAL GRANTS	2006/07	2007/08	2008/09	2009/10
Total number of grant applicants	22	33	26	28
Total number of applicants receiving grants	11	9	13	17
Total budgets available to applicants	\$80,000	\$80,000	\$80,000	\$78,170
Total budget distributed to applicants	\$67,750	\$67,750	\$56,052	\$75,170

Projects supported included Wellington e-day (for disposal of electronic waste), Enviroschools Foundation (to maintain a network of sustainable communities through Wellington schools), native tree planting in Kentwood Drive Reserve, and an environment and community-building health initiative achieved through gardening.

Source: WCC City Communities and Grants.

Wellington's built-up areas are surrounded by green open space. Altogether, more than 200 square metres per person is protected in Town Belt and reserves.



2.3 WATER

A city cannot function without a safe, reliable water supply – it is a fundamental need. Water is critical for the health and well-being of Wellington residents. Under the Local Government Act 2002, we are required to ensure an ongoing provision of water supply that is adequate to meet the city's needs.

This activity includes:

- **Water network** – We own the city's water network and contract Capacity Infrastructure Services Limited (Capacity) – a company we jointly own with Hutt City Council – to manage, maintain and operate the network on our behalf.
- **Water collection and treatment** – We purchase water in bulk from the Greater Wellington Regional Council and supply it to Wellington properties.

Our water network includes more than 1,000km of pipes, along with 81 reservoirs, 34 pumping stations, more than 7,300 hydrants, and more than 65,000 domestic connections. Each year, the city uses approximately 30 million cubic metres of water.

A major challenge is managing our use of a resource that's in limited supply. Water conservation and more efficient use of water are increasingly important in light of potential climatic changes and Wellington's growing population.

The city's water network assets (such as pipes and pumping stations) are managed under an asset management plan which sets out expectations about condition and capacity, how long assets are expected to last, and other factors such as water quality standards, and continuity of supply. This plan guides decisions about maintenance, upgrades and renewals of assets.

KEY PROJECTS

During the year, the Council completed its 'Three Waters' strategy, which will guide future management of the city's water, stormwater and wastewater assets.

The plan sets out key issues facing each network. For water, these included demand and security of supply. For wastewater, they included wet weather overflows and formation of hydrogen sulphide within the network. For stormwater, they include the threat of flooding, and contamination of waterways.

For some of the actions identified in the plan, such as hydrogen sulphides in the wastewater network, work began during the year (see activity 2.4 Wastewater and Stormwater).

Water Conservation

Wellington City Council and Capacity completed a draft Water Conservation and Efficiency Plan, to go out for public consultation during 2010/11 (see 'In Focus').

Pressure reduction

Parts of Roseneath and Hataitai were identified as having excessively high water pressure, which can cause pipes to burst and increase leakage. In April, we began to progressively lower the water pressure in those suburbs. This will continue during 2010/11 until water pressure is in line with the rest of the city.

The lower pressure means it could take a little longer to fill a bath or washing machine, but residents should otherwise notice little difference. Lower pressure will improve the reliability of the water supply system and conserve water, and could also mean that appliances and fittings last longer.

Area meters and measuring consumption

Four new district area meters were installed – three in Johnsonville and one in Newtown – to form three new water supply zones. Area meters are used to help us calculate water consumption and plan leak detection work.

From 2010/11, we will start installing domestic meters in 300 households, to help us get an accurate measure of residential consumption. This will help us get a more accurate idea of how much water is leaking from our water network before it gets to households. The households with meters will not be charged for water. This is a survey tool, not a step towards city-wide water metering. Note: these water meters are separate to the voluntary meters some residents use to pay for their water.

Seismic studies

Seismic studies were undertaken on Wellington reservoirs, which will see the installation of couplings that are designed to shut off during an earthquake. This will ensure that the water remains in the reservoirs after an earthquake.

Renewals and upgrades

Work began on the Seatoun main link project, which will see a pipeline connecting the Maupuia and Seatoun water supply zones. Under this project, 1,200m of water main will be upgraded to provide more reliable water supply and also allow water to be sourced from other zones if required.

Other work carried out during the year included:

- relining the Broadmeadows Reservoir – repairs were made to concrete work, and the pipework was replaced
- installation of pressure reducing valves (PRVs) in Ponsonby Road (Karori), Houghton Bay Road, and Nevay Road (Seatoun Heights) on the existing water mains
- replacement of fire-fighting water mains in Berhampore
- renewal of nearly 8,500m of water pipes across the city.

Design was completed for the Messines Road Reservoir and construction will begin in 2010/11.

OUTCOMES

This activity contributes to the following outcomes: more sustainable; safer. 'Safety' refers to water quality, while sustainability refers to reduced environmental impact through efficient use of water and other resources.

During the year, Wellington used the equivalent of 149,025 litres of water per person. This includes both residential and commercial water use. Water use has declined in recent years, from 152,219 litres per person in 2008/09 and 161,234 litres per person in 2007/08.

IN FOCUS

SECURING WELLINGTON'S WATER SUPPLY

Wellington's water supplies are under pressure.

Every year, Wellingtonians use about 30 million cubic metres of water – about 150,000 litres per person. This includes household uses such as washing and bathing, as well as commercial and institutional uses (including unaccounted for water through public and private leaks, mains flushing, fire-fighting and unauthorised consumption).

That water is sourced from catchments north of the city including the Hutt, Wainuiomata and Orongorongo Rivers. It is then treated to remove contaminants, piped to the city, stored in reservoirs, and pumped to properties for use.

Although as a city we receive ample rainfall, we do not have enough storage capacity to make the most of it, and there are limits to how much water can be taken from rivers without causing harm.

Already, during dryer summer months, demand for water exceeds supply.

This means we rely on water drawn from Te Marua Lakes (the source of many complaints about taste during 2009/10). In future, demand may continue to grow as the population increases. To maintain overall consumption at current levels, we'd need to cut per person water use by 30 litres a day between now and 2021.

Climate change (which could make rainfall patterns more variable) and earthquake risks could also affect future water supply.

In response, Wellington City Council has developed a draft Water Conservation and Efficiency Plan, to go out for public consultation during 2010/11. The plan considers options for ensuring the city's future water supply, ranging from water conservation measures to increases in storage capacity.

Continuing as we are will eventually lead to shortages.

While the Council is already trying to improve water conservation, for example by finding and fixing leaks in the water mains, the plan shows that continuing as we are will ultimately result in water shortages. This will lead to additional water restrictions in dry weather, and possibly also create a need to install water meters and to build a dam to store water for the city.

Councillors in May decided that saving water is the best available option, and agreed to work with residents and the Greater Wellington Regional Council to achieve that. The Council also agreed that water meters are not part of the next phase of water conservation, but may be necessary in the more distant future – along with a potentially costly new dam – if growth in the city's total consumption cannot be halted.

WHAT IT COST

	ACTUAL 2010	BUDGET 2010	VARIANCE 2010	ACTUAL 2009
OPERATING EXPENDITURE (\$000)				
2.3.1 Water Network¹				
Expenditure	20,051	20,591	540	20,014
Revenue	(2,500)	(31)	2,469	(866)
Net Expenditure	17,551	20,560	3,009	19,148
2.3.2 Water Collection and Treatment				
Expenditure	12,705	12,858	153	12,726
Revenue	1	-	(1)	(19)
Net Expenditure	12,706	12,858	152	12,707
CAPITAL EXPENDITURE (\$000)				
2.3.1 Water Network²				
Expenditure	9,916	10,304	388	10,254
Unspent portion of budget to be carried forward	N/A	859	-	N/A

¹ Operating revenue is over budget due to the recognition of unbudgeted vested asset income. Operating expenditure is under budget due to favourable interest rate costs and lower than budgeted depreciation.

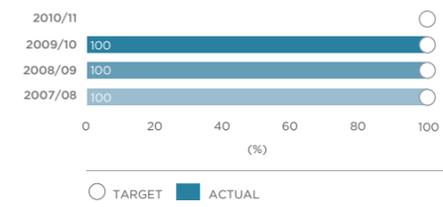
² Capital works to the Messines Road Reservoir delayed due to design changes required after consultation with local residents.

Funding note: Operating expenditure in this activity is funded mainly through targeted rates (we aim for 60% from the residential sector and 40% from the commercial sector - most commercial properties pay through a consumption charge).

HOW WE PERFORMED

It is critical to ensure Wellingtonians have access to safe, reliable drinking water for their health and well-being. Our success is demonstrated by complete compliance with NZ Drinking Water Standards and residents' perceptions that water service provide good value for money.

Compliance with New Zealand drinking water standards (2005)



Source: Capacity Infrastructure Services Ltd.

Water distribution network - quality grading

Result: all parts of the network were graded 'a' to 'b' in the Ministry of Health quality grading (target: 'a' to 'b').

'a' gradings refer to assets that are completely satisfactory with negligible or very low levels of risk; 'b' gradings refer to assets that are satisfactory with very low levels of risk. 'c' refers to assets that are marginally satisfactory with moderate-low risk.

In 2008, the Ministry of Health graded the entire network. Annually, they seek to ensure this grading has been retained by reviewing the Council's replacement and/or maintenance of water pipes.

Source: Capacity Infrastructure Services Ltd.

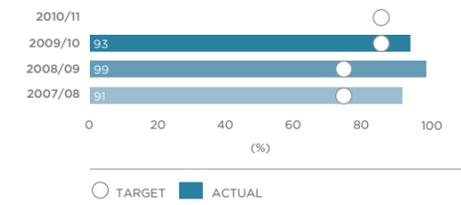
Customer complaints regarding water quality (taste and odour)

Result: 377 complaints (target: fewer than 80).

Most of the complaints were during the early part of 2010 and concerned a noticeable change in taste for some customers. This was caused by the chemical treatment process used by the Greater Wellington Regional Council to treat water sourced from the Te Marua lakes that had more algae than usually experienced. The water supplied met NZ Drinking Water Standards guidelines at all times. Capacity has raised the taste issue and related complaints with the Greater Wellington Regional Council.

Source: Capacity Infrastructure Services Ltd.

Customer (%) satisfaction with water network



Source: Capacity Infrastructure Services Ltd.

Water pressure

Result: 96% of properties had appropriate water pressure i.e. minimum 250kPa (target: 98%). Some older water supply zones have lower pressure and this cannot be improved without significant cost. As newer developments are completed, and pipe-upgrades are carried out, the target will be reached.

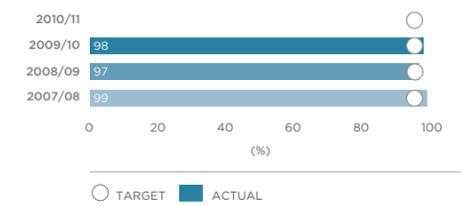
Source: Capacity Infrastructure Services Ltd.

Fire hydrants

Our target was for 95% of hydrants tested to meet New Zealand Fire Service Code of Practice firefighting water supply requirements. The Fire Service did not carry out testing in Wellington during 2009/10. Testing is expected to resume in 2010/11. Our modelling indicates that that we will be able to meet the Code requirements in most cases.

Source: Capacity Infrastructure Services Ltd.

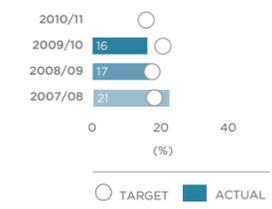
Water network service requests (%) that are responded to within one hour of notification



Response includes initial investigation and prioritisation of the work. For 2010, the data are from the second half of the year. A new contractor took over this work at the beginning of the financial year, and reliable data are not available for the first six months.

Source: Capacity Infrastructure Services Ltd.

Unaccounted water from the network - estimated water loss (%)



Unaccounted for water includes leaks from the public and private network.

During the year, active leak detection programmes were undertaken on the public network, including work in Johnsonville, Newtown, Ngaio, Churton Park, Tawa, and within the CBD. A number of significant leaks on private residences were also identified and fixed during the year.

The pressure reduction trial in Mt Victoria and Roseneath should reduce the number of bursts and the effects of any leaks.

Source: Capacity Infrastructure Services Ltd.

Residential water consumption

Result: 300 litres per person per day (target: 345 litres per person per day).

Residential water consumption is based on the total bulk water supplied less the metered commercial consumption divided by the resident population. The water metering programme (see 'key projects') will help us to develop more accurate estimates of residential water use.

Source: Capacity Infrastructure Services Ltd.

Residents' (%) agreement that water services provide good value for money

Result: 85% (target: 90%).

Source: WCC Residents' Satisfaction Survey 2010.

2.4 WASTEWATER AND STORMWATER

Our key aims for this activity are safety and sustainability: wastewater and stormwater should be disposed of in ways that protect public health and don't compromise the environment.

This activity includes:

- **Stormwater management** – We own the city's stormwater network and contract Capacity Infrastructure Services Limited (Capacity) – a company we jointly own with Hutt City Council – to manage, maintain and operate the network.
- **Wastewater collection and disposal network** – We own the city's wastewater collection and disposal network and contract Capacity to manage, maintain and operate the network.
- **Wastewater treatment** – We own Karori and Moa Point treatment plants, and co-own the Porirua treatment plant with Porirua City Council; the Karori and Moa Point plants are managed by United Water.

A city cannot function without safe, reliable networks for wastewater and stormwater disposal – they are critical for the health, safety and general well-being of residents, and for the health of the environment.

Under the Local Government Act 2002, we are required to ensure the ongoing provision of stormwater and wastewater services is adequate to meet the city's needs.

The city's stormwater network includes almost 650km of pipes with an average age of over 50 years. These pipes carry almost 80 million cubic metres of water each year from kerbs, channels and household drains into the city's waterways. Stormwater is discharged untreated into streams and the sea.

The wastewater network includes the treatment plants and about 970km of pipes with an average age of over 50 years, as well as 60 pumping stations. The network carries about 29 million cubic metres of wastewater each year. Treated wastewater is discharged into the sea.

A key challenge for this area is ensuring the stormwater and wastewater networks have sufficient capacity to cope with demand. Insufficient capacity in the stormwater network results in flooding.

Another key challenge is managing environmental effects from both wastewater and stormwater. For stormwater, it's important that members of the public are aware of their responsibilities to keep contaminants out of our waterways, drains and the sea.

Wastewater and stormwater network assets (such as drains and treatment plants) are managed under an asset management plan, which sets out expectations for condition and capacity, and how long assets are expected to last. This plan guides decisions about maintenance, upgrades and renewals of assets. We inspect critical assets to ensure they are up to the expected standard.

KEY PROJECTS

Renewals and upgrades

- About 4,500m of wastewater mains were renewed in parts of Karori, Khandallah, Rongotai, Oriental Parade, Edge Hill, Wilton, Seatoun, and Northland.
- About 1,700m of stormwater pipes were renewed with work undertaken in Karori, Khandallah, Newtown, Kilbirnie, Miramar, Tawa, and Lyall Bay.
- At the Moa Point waste treatment plant we started to trial ultraviolet treatment of wastewater overflows; this is expected to reduce the impact of overflows on the environment. Design work was carried out for upgrading the pumps at the Moa Point inlet pump station (in our long-term plan, the upgrade was scheduled for 2009/10 but will now go ahead in future years).
- We started work on installing grit traps in CBD stormwater culverts to reduce the risk of flooding. The Waring Taylor stormwater culvert will be the first completed in August 2010. Work on this culvert was delayed by a lengthy resource consent process. Work on other major culverts will be completed in the next two years.
- A new stormwater main was installed in Newtown to alleviate flooding in the Constable Street area. This was part of a \$4.1m programme of infrastructure improvements in the suburb which also included road safety improvements and water network and sewer upgrades.

Contamination – Owhiro Bay

Owhiro Bay beach was closed three times during the year, including an extended period from February to April after testing found unacceptably high levels of bacteria associated with wastewater.

Extensive investigation (using CCTV and dye) was carried out. A number of broken sections of wastewater and stormwater pipes, both Council-owned and on private property, were found and repaired. These covered a large area of the catchment, from Brooklyn to Island Bay. Illegal cross-connections from wastewater drains were also found. The beach was reopened after bacteria counts fell to safe levels. Further work will continue during 2010/11 to identify and repair any further sources of contamination.

During the work, the sewer main along Happy Valley Road was identified for renewal. This will take place early in the 2010/11 financial year.

Contamination – Houghton Bay

Leachate from the closed Houghton Bay landfill is diverted into a wastewater drain to prevent contaminants from reaching the beach. During the year, work was carried out on the stormwater pipe to reduce leachate that had stuck to the pipe. This is expected to reduce concerns about odour and discolouration of Houghton Bay during heavy rainfall.

Stormwater discharge consent application

A resource consent had been applied for to discharge stormwater into coastal marine areas and harbour. This application was publicly notified in July 2010. It is expected the resource consent will provide for monitoring programmes and the development of a plan to mitigate stormwater contaminated with heavy metals, wastewater and oils discharging into the harbour and waterways.

Wastewater overflow monitoring

We installed a new system for monitoring wastewater overflows, which allows us to monitor overflows remotely and to receive alerts and data in real time.

Hydrogen sulphide strategy

We developed a strategy to address the issue of hydrogen sulphide in the wastewater network. The hydrogen sulphide is being generated within the network and will corrode concrete pipes and manholes if unchecked. The strategy includes monitoring for 'hot spots' and undertaking remedial work.



CLEANING UP WELLINGTON'S WATERWAYS

Water quality in Wellington Harbour and the Cook Strait has improved dramatically in the last 10-15 years.

Over the last decade or two, Wellington City Council has invested hundreds of millions of dollars in infrastructure, aimed at protecting human health and the wider environment.

We have opened the Moa Point and Karori wastewater treatment plants, replaced some 75km of wastewater pipes, and built 21 wastewater holding tanks to ensure that wastewater does not spill into drains and make its way to the city's waterways during periods of heavy rain.

We have also made thousands of repairs on wastewater pipes, removed many illegal connections between the stormwater and wastewater networks, and informed residents about the environmental harm that results from contaminants such as paint and oil getting into stormwater drains and entering waterways.

The result of all this work has been a dramatic improvement in water quality over the last 15 years. Since the mid-1990s, presence of faecal coliforms (bacteria associated with wastewater contamination) has declined at testing sites throughout the city – generally from tens of thousands of units per 100ml of water to just hundreds.

That's not to say the system is perfect. Water quality is an ongoing challenge for Wellington, as it is for any city.

As noted in 'how we performed', during the year two beaches were closed because contamination exceeded guidelines, and one of those – Owhiro Bay – remained closed for an extended period.

Managing the city's stormwater and wastewater systems is a major area of Council activity, accounting for almost \$50m a year in operational spending. In coming years we'll be seeking further improvements, including ongoing repair and renewal of the stormwater and wastewater networks, continued removal of illegal cross-connections, and installation of grit traps in CBD stormwater drains.

We're making ourselves more accountable for the effects of stormwater on the harbour and coast.

In May 2010, we applied for a 10-year resource consent to cover all of the city's stormwater discharge. While our current consent covers 12 major stormwater drains, the new consent will cover hundreds of outfalls, from Horokiwi to the south coast, where stormwater drains into the sea. This recognises the fact that all sites should be monitored to keep harbour and coastal water as clean as practicably possible.

As part of that consent, we're planning further work to determine the effects of pollutants in stormwater – such as metals, oils and litter – on our waterways.

Residents can help by keeping paint, oil, chemicals, dog droppings – and everything else except rainwater – out of stormwater drains.

OUTCOMES

This activity contributes to the following outcomes: more sustainable; safer.

'More sustainable' refers to reducing environmental impacts and minimising waste. Most Wellington residents take steps that reduce stormwater pollution, such as putting litter in rubbish bins so it won't wash down drains (91% of residents); pouring household wastes down the sink, toilet or gully trap (72%); and disposing of oil, paint and chemicals by putting them out with household rubbish or taking them for recycling (69%); collecting sweepings from the driveway, paths or yard for composting or disposing with household rubbish (62%) and washing the car on the lawn so the soap doesn't go down stormwater drains (52%). The proportion of residents taking most of these actions has increased in the last three years.

A smaller number take other actions, such as washing paint brushes in an inside sink so the paint doesn't go down stormwater drains (26%), picking up droppings left by dogs (26%), and trying to use natural/environmentally friendly detergents (1%).

WHAT IT COST

	ACTUAL 2010	BUDGET 2010	VARIANCE 2010	ACTUAL 2009
OPERATING EXPENDITURE (\$000)				
2.4.1 Stormwater Management¹				
Expenditure	13,537	14,008	471	13,854
Revenue	(1,727)	(8)	1,719	(3,258)
Net Expenditure	11,810	14,000	2,190	10,596
2.4.2 Wastewater Collection and Disposal Network²				
Expenditure	14,622	15,249	627	14,510
Revenue	(1,387)	(668)	719	(2,729)
Net Expenditure	13,235	14,581	1,346	11,781
2.4.3 Wastewater Treatment				
Expenditure	19,760	19,365	(395)	21,061
Revenue	(962)	(730)	232	(1,283)
Net Expenditure	18,798	18,635	(163)	19,778
CAPITAL EXPENDITURE (\$000)				
2.4.1 Stormwater Management³				
Expenditure	3,652	3,649	(3)	3,807
Unspent portion of budget to be carried forward	N/A	1,340	-	N/A
2.4.2 Wastewater Collection and Disposal Network⁴				
Expenditure	7,530	7,372	(158)	8,078
Unspent portion of budget to be carried forward	N/A	1,650	-	N/A

¹ Stormwater Management operating revenue is over budget due to the recognition of unbudgeted vested asset income. Operating expenditure is under budget due to favourable interest rate costs.

² Wastewater Collection and Disposal Network operating revenue is over budget due to the recognition of unbudgeted vested asset income. Operating expenditure is under budget due to favourable interest rate costs.

³ Capital works to Tacy Street were delayed due to detailed design changes impacting the procurement of pumps for the stormwater flood protection upgrade. Works are scheduled to start in 2010/11.

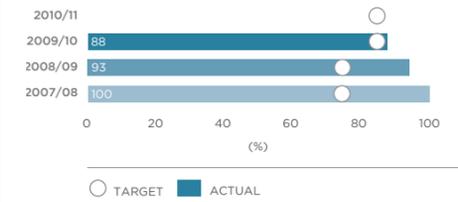
⁴ Moa Point Treatment Plant pump station upgrade and ultraviolet plant have been delayed due to finalisation of the detailed design. Works are scheduled to start in 2010/11.

Funding note: Operating expenditure in this activity is funded mainly through targeted rates (we aim for 60% from the residential sector and 40% from the commercial sector for wastewater, and an 80/20 split on stormwater).

HOW WE PERFORMED

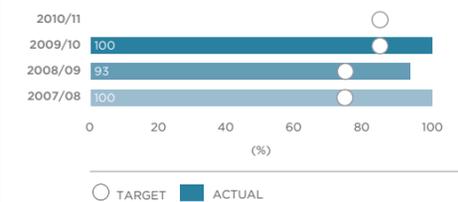
We aim to ensure that our stormwater and wastewater network protects public health and property without compromising the environment. Our success is demonstrated through responding to service requests within an hour of notification and ensuring no buildings are flooded as a result of a one in fifty year rain event.

Customer (%) satisfaction with stormwater services



Source: Capacity Infrastructure Services Ltd.

Customer (%) satisfaction with wastewater services



Source: Capacity Infrastructure Services Ltd.

Response time to service requests

Result: 90% of requests were responded to within one hour of notification (target: 90%). This information reflects the period October to June (we do not have reliable data for the first quarter). Persistent rainfall over the fourth quarter produced a higher than normal number of requests for service relating to both stormwater and wastewater networks.

Source: Capacity Infrastructure Services Ltd.

Residents' (%) agreement wastewater and stormwater services provide good value for money

Result: 67% (target: 90%).

Source: WCC Residents' Satisfaction Survey 2010.

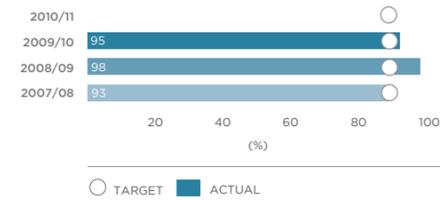
2.5 WASTE REDUCTION AND ENERGY CONSERVATION

Flooding

Result: No properties were flooded as a result of a one-in-50-year rain event (target: no properties).

Source: Capacity Infrastructure Services Ltd.

Monitored bathing beaches (% of sampling days) that comply with Ministry for the Environment guidelines (Green Status)



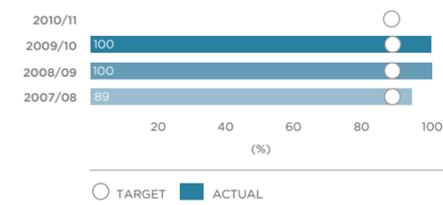
Three of the 21 monitored bathing sites exceeded the guideline during the bathing season. In 2008/09, two sites exceeded the guideline, while the results for the preceding two years were 11 and 3.

The 2009/10 incidents were restricted to the south coast. As noted in 'key projects', Owhiro Bay was closed three times, the longest period being from February to April after bacteria counts exceeded safe levels. Island Bay was closed from 7 to 10 December after bacteria counts briefly exceeded safe levels. A blocked sewer was identified as the cause and fixed.

Bathing beach guidelines (grades) are: Green (water is acceptable for bathing - routine monitoring); Amber (increased risk of illness from bathing, but still within an acceptable range - increased monitoring, investigation of source and risk assessment); Red (the water poses an unacceptable health risk from bathing - closure, public warnings, increased monitoring and investigation of source).

Source: Capacity Infrastructure Services Ltd.

Freshwater sites (%) within acceptable faecal coliform counts



Fortnightly sampling is undertaken at each site. Acceptable faecal coliform counts are 1,000 bacterial colony forming units (cfu) per 100mL for the annual median at each site - these targets are based on the Australia and New Zealand Environment and Conservation Council (ANZECC) guidelines for recreational water quality and aesthetics. These guidelines are essential for protecting people when using freshwater sites for recreation.

Source: Capacity Infrastructure Services Ltd.

Stormwater network - resource consent compliance

Result: 100% compliance (target: to meet compliance).

Source: Capacity Infrastructure Services Ltd.

Wastewater network - resource consent compliance

Result: 100% compliance (target: to meet compliance).

Source: Capacity Infrastructure Services Ltd.

We aim for Wellington to be a sustainable city by encouraging energy efficiency and ensuring waste is disposed of safely, without causing harm to the environment.

This activity includes two projects: **energy efficiency and conservation**; and **waste minimisation, disposal and recycling**.

Our goal is for Wellington to be a sustainable city, which means meeting today's needs in ways that don't cause future harm. This is a massive challenge: a truly sustainable city meets its energy needs from renewable supplies, uses resources efficiently, and finds ways to minimise waste and to re-use or recycle instead of sending rubbish to landfills.

Wellington can't claim to be a truly sustainable city - but we are heading in the right direction. The city's recycling volumes, for example, have been steadily increasing in recent years.

WASTE MINIMISATION, DISPOSAL AND RECYCLING

We operate the Southern Landfill and obligations under the Waste Minimisation Act 2008 to promote effective and efficient waste management and minimisation within the city, and ensure that waste is disposed of safely. This includes planning to achieve waste minimisation through means such as reducing the amount of waste produced in the city and by re-using, recycling or finding other ways to minimise the impacts of the waste that is produced.

We contribute by:

- collecting recycling from households and businesses and delivering it to recycling facilities
- collecting solid waste from households and delivering it to the Southern Landfill or Spicer Landfill in Porirua (in which we have a minority ownership stake) for disposal
- managing the Southern Landfill to minimise harmful effects by: complying with resource consents; separating recyclable waste; separating hazardous waste and disposing of it safely; operating the Second Treasure Shop where items such as furniture and appliances can be dropped off for resale; and licensing an external company to capture landfill methane and use it to generate electricity
- monitoring and managing environmental impacts (such as greenhouse gas emissions and leachate) from the city's 30 closed landfills
- enforcing waste bylaws
- providing residents with information about waste reduction, and making plans to reduce waste.

ENERGY EFFICIENCY AND CONSERVATION

We promote energy efficiency and conservation in our own operations and in the city. This includes:

- improving energy efficiency in our own services
- supporting households to reduce energy use
- advocating for others to reduce energy use and to increase electricity generation from renewable sources.

We have targets of stabilising both Council and city-wide greenhouse gas emissions by the end of the 2010 calendar year, and achieving a 40% reduction in Council emissions and a 30% reduction in city-wide emissions (from 2001 levels) by 2020.

Many of our other activities contribute to this goal - in particular, our transport and urban development strategies aim to encourage use of public transport and other alternatives to private cars, and support development that allows people to live close to transport hubs and to places of work and recreation.

This work is guided by our Climate Change Action Plan.

KEY PROJECTS

Energy efficiency and conservation

- Following extensive consultation, the Council in June approved a new Climate Change Action Plan, which focuses on mitigating and adapting to the impacts of climate change on the city. As part of the action plan, several new initiatives on climate change were included in our 2010/11 Annual Plan, including the eMission and electric vehicle programmes (below).
- The Council signed a Memorandum of Understanding with Japanese vehicle manufacturer Nissan, agreeing to work together to find ways to promote the use of zero-emission electric vehicles in Wellington. Nissan aims to pilot zero-emission electric vehicles in the city in 2011.
- We supported Earth Hour on March 27, under which residents were encouraged to turn off lights and non-essential appliances as a sign of support for global action on climate change.
- We investigated the impacts of potential sea level rise in the Kilbirnie and Rongotai areas, and in partnership with the National Institute of Water and Atmospheric Research and Victoria University we supported projects to further assess the impacts of climate change on Wellington.
- Wellington was fifth in a ranking of the world's top eco-cities by global consulting company Mercer.
- The Mayor attended the Climate Summit for Mayors in Copenhagen in December 2009, held alongside the United Nations meetings (see case study, page 21).
- With government agencies and other Councils in the region, we supported the eMission programme, which aims to reduce businesses' resource consumption.
- We supported the Government's Warmup New Zealand: Heatsmart scheme by contributing \$35,000 toward promoting and subsidising home insulation and heating in Wellington households. We also worked with the Greater Wellington Regional Council to implement an option for households to pay for refit costs through their rates over nine years.

- We developed a procurement policy that delivers more sustainable outcomes from the Council's many suppliers, and worked with Council business units to achieve energy savings in capital projects.
- We received 1,531 carbon credits under the Emissions Trading Scheme in recognition of the carbon absorbed by a part of the green belt (see note 15 in the financial statements for more information).

Waste minimisation and recycling

- The Council in May approved adoption of recycling wheelie-bins, which are expected to significantly increase the amount of recycling collected.

During the year we conducted a number of community outreach activities, including:

- Helping plan, prepare and operate eDay in September - 87 tonnes of waste were received on the day and processed by 250 volunteers and staff.
- Working with the Ministry for the Environment and Nova Gas to provide a tour of the landfill site and power generation plant for Chilean government officials. We also hosted almost 200 visitors on a tour of the landfill complex.
- Diverting food waste at nine city events, raising the profile of rubbish and recycling at these events.
- Bringing composting in-house and continuing to supply quality compost.

Development of stage four of the Southern Landfill is due to commence in 2010/11.

OUTCOMES

This activity contributes to the following outcome: more sustainable, under which we aim to reduce our impact on the environment through more efficient use of energy and other resources.

Most Wellington residents take action to reduce waste, including using kerbside recycling (90%), donating used items to second-hand shops/charities (90%), re-using plastic containers (88%), buying refills (73%), and not using plastic bottles or bags, or by using green bags (59%). A smaller proportion of residents take other actions such as taking things to recycling stations (52%) and home composting (48%).

During the year, 0.41 tonnes of rubbish was dumped in the city's landfill for every Wellington resident. This compares with 0.42 tonnes in 2008/09 and 0.36 tonnes the previous year.

Energy use per person has increased from 6.6 MWh per person in 2007/08 (March year) to 7.2 MWh/person in 2009/10 - this increase has been attributed to severe weather events during 2009/10, and colder than average temperatures. There were also more supply interruptions during 2009/10 due to severe weather events.

WHAT IT COST

	ACTUAL 2010	BUDGET 2010	VARIANCE 2010	ACTUAL 2009
OPERATING EXPENDITURE (\$000)				
2.5.1 Energy Efficiency and Conservation				
Expenditure	171	167	(4)	111
Revenue	(3)	-	3	(2)
Net Expenditure	168	167	(1)	109
2.5.2 Waste Minimisation Disposal and Recycling Management¹				
Expenditure	9,378	9,490	112	7,896
Revenue	(9,386)	(9,238)	148	(7,917)
Net Expenditure	(8)	252	260	(21)
CAPITAL EXPENDITURE (\$000)				
2.5.1 Energy Efficiency and Conservation				
Expenditure	125	125	-	195
Unspent portion of budget to be carried forward	N/A	32	-	N/A
2.5.2 Waste Minimisation Disposal and Recycling Management²				
Expenditure	90	171	81	803
Unspent portion of budget to be carried forward	N/A	628	-	N/A

¹ Waste minimisation operating revenue is over budget due to more contaminated soil waste being disposed of than was budgeted for. Operating expenditure is under budget due to a credit being recognised for the revaluation of the closed Landfill provision.

² Capital works on the Southern Landfill project have been delayed due to the site accident investigation. Works are scheduled to start in 2010/11.

Funding note: Energy efficiency and conservation operating expenditure is funded through general rates. Waste minimisation operating expenditure is funded mainly through user charges with a small contribution from general rates (reflecting the benefit to the whole community of waste minimisation activities).

HOW WE PERFORMED

We provide waste management services and ensure waste is disposed of safely, without causing harm to the environment. We also encourage energy efficiency and seek ways to reduce our own energy use. We know we're successful when a high proportion of residents are satisfied with our waste management services and agree these services are good value for money, and when city and Council greenhouse gas emissions are stable or falling.

Greenhouse gas emissions

Our targets were to stabilise city greenhouse gas emissions at 2001 levels by 2010, and stabilise WCC corporate emissions at 2003 levels by 2009/10. This data is not available. Our city greenhouse gas inventory will next be updated by the end of the 2010 calendar year and our corporate inventory in 2011.

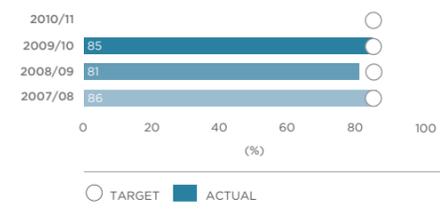
The latest corporate inventory indicated that emissions had been reduced by 25% since 2003 (from 22,959 tonnes CO₂-e in 2003 down to 17,246 tonnes CO₂-e in 2008). These figures suggest that we are well on the way to exceeding our stabilisation target by the end of 2010.

The latest city inventory indicated that emissions increased from 1.1 million tonnes CO₂-e in 2001 to 1.2 million tonnes CO₂-e in 2006/07. Note: these two figures are not directly comparable due to a change in the way emissions are calculated. In 2010/11, we will recalculate the 2001 emissions based on this new methodology.

The Council has set a new interim target of reducing city-wide emissions by 3% (below 2001 levels) by 2013, as a stepping stone towards a target of 30% emissions reduction by 2020.

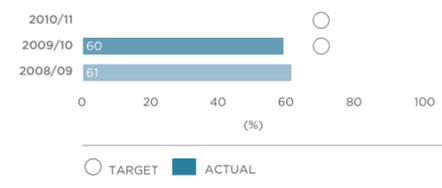
Source: WCC Climate Change Office.

Residents (%) who use kerbside recycling weekly



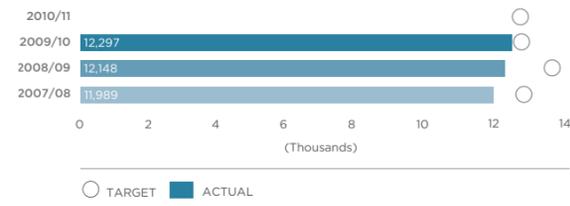
Source: WCC Residents' Satisfaction Survey 2010.

Residents (%) who use rubbish collection services weekly



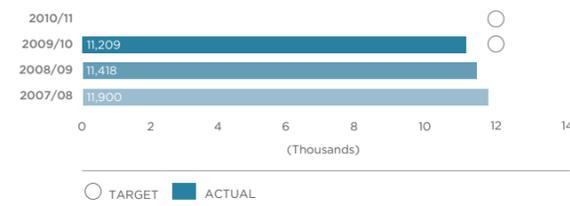
Source: WCC Residents' Satisfaction Survey 2010.

Kerbside recycling collected (tonnes)



Source: WCC CitiOperations.

Kerbside waste collected (tonnes)



Source: WCC CitiOperations.

Residents' (%) satisfaction with waste management services

Result: recycling collection 85% (target: 85%); waste collection 92% (target: 85%).

Source: WCC Residents' Satisfaction Survey 2010.

Landfill - resource consent compliance

Result: compliance achieved (target: compliance).

Source: WCC CitiOperations.

Recyclable material diverted from the landfill vs. waste deposited in the landfill (tonnes)



The amount of recyclable material diverted from the landfill significantly increased in 2009/10. This was due to a one-off increase in the volume of contaminated soil. This material has been diverted from the existing landfill and used in remediating a closed part of the landfill with the added benefit of converting the closed landfill into a relatively usable piece of land.

Source: WCC CitiOperations.

Residents' (%) agreement that waste management services provide good value for money

Result: 79% (target: 90%).

This is a new measure for all activities. Our baseline for waste management services is now at 79%. Note: 11% were neutral in their opinion and 11% disagreed. We will review the target for 2011/12.

Source: WCC Residents' Satisfaction Survey 2010.

Energy sourced from the Southern Landfill

Result: 7.2GWh (target: 8GWh).

Source: Todd Energy.

WCC corporate energy use (electricity and natural gas)

PROPERTIES	TARGET	RESULT
Civic complex	7,543,300 kWh	7,417,800 kWh
Pools and recreation facilities	14,735,500 kWh	17,649,200 kWh
Wellington Convention Centre	4,110,900 kWh	4,596,700 kWh

Pools used more energy than expected for a range of reasons, including additional heating at Keith Spry Pool in response to users' concerns, and unplanned but necessary maintenance of the pool heating plant at Wellington Regional Aquatic Centre which required us to temporarily use a less efficient pool heater.

The bulk of Wellington Convention Centre increases were at the Town Hall. We are investigating options to reduce energy use in future.

Source: WCC Energy Management.

2.6 ENVIRONMENTAL CONSERVATION ATTRACTIONS

Nature is one of Wellington's biggest attractions.

Zealandia - the Karori Sanctuary, the proposed Marine Education Centre and Wellington Zoo, provide the city with a range of facilities that play crucial roles in wildlife conservation, educating people about nature, and attracting visitors to the city. Under this activity, the Council provides funding to these facilities.

The Zoo has more than 400 animals and attracts more than 180,000 visitors each year. Zealandia also attracts tens of thousands of visitors and has a vision of restoring pristine native forest and bird life in a valley just minutes from the central city.

Both the Zoo and the Sanctuary are on Council land and receive Council funding. Zealandia is managed by the Karori Sanctuary Trust under a lease arrangement, and the Zoo is managed by a Council-controlled organisation, the Wellington Zoo Trust.

Along with Te Papa and the redeveloped Carter Observatory (see the economic development chapter, page 51), and other attractions such as Otari-Wilton's Bush, botanic gardens and the Taputeranga Marine Reserve, they form a cluster of science and nature-based attractions for residents and visitors to the city.

KEY PROJECTS

Zealandia

- On 2 April, the visitor centre at the Sanctuary opened to the public. *Zealandia: The Exhibition* features multimedia displays and interactive exhibits telling the story of New Zealand's unique natural history and conservation movement. We provided a \$9.9 million loan and operational funding to support development of the new facility.
- Zealandia continued to make significant contributions to wildlife conservation - during the year, this included the final transfer of giant weta into the sanctuary; a transfer of kakariki (bringing the number of species brought into the sanctuary to 16); and several species breeding in the sanctuary including tuatara, giant weta, pied shags and falcons.
- In February, Zealandia made the UK's *Guardian Green Travel Guide's* list of 'green attractions'.

Wellington Zoo

- Wellington Zoo continued its programme of redevelopment with completion of *The Nest - Te Kāhanga*, the zoo's state-of-the-art animal hospital in December, and completion of the Africa Village in November. The Nest won the Australia, New Zealand and South Pacific Zoo and Aquarium Association's Best New Large Exhibit Award.

- The Zoo continued its contribution to animal conservation. This included discovery of the first tuatara eggs at the Zoo for more than 20 years, the birth of an endangered Otago skink, and establishment of conservation fellowships for projects that protect New Zealand's unique flora and fauna.
- The Zoo won the People's Choice Award at the national Sustainable Business of the Year Awards, after winning the supreme award and the sustainability award at the central/southern region awards.
- Zoo Chief Executive Karen Fifield won the Outstanding Corporate Leadership category and the Sustainability category at the HER Business Wellington Regional Businesswoman of the Year Awards.

Marine Education Centre

We've supported the Wellington Marine Conservation Trust in their work to investigate the feasibility of establishing a Marine Education Centre at the Council-owned former Maranui depot in Lyall Bay.

OUTCOMES

This activity contributes to the following outcome: more competitive. Under this outcome, our aim is for the city's high quality natural environment to attract visitors, residents and businesses.

During the year, 245,340 people visited Wellington Zoo and Zealandia.

WHAT IT COST

	ACTUAL 2010	BUDGET 2010	VARIANCE 2010	ACTUAL 2009
OPERATING EXPENDITURE (\$000)				
2.6.1 Zoo¹				
Expenditure	3,863	3,661	(202)	3,621
Revenue	-	-	-	-
Net Expenditure	3,863	3,661	(202)	3,621
2.6.2 Karori Sanctuary				
Expenditure	1,715	1,781	66	639
Revenue	-	-	-	-
Net Expenditure	1,715	1,781	66	639
2.6.3 Marine Education Centre²				
Expenditure	41	450	409	-
Revenue	-	-	-	-
Net Expenditure	41	450	409	-
CAPITAL EXPENDITURE (\$000)				
2.6.1 Zoo				
Expenditure	2,907	2,792	(115)	4,491
Unspent portion of budget to be carried forward	N/A	16	-	N/A

¹ Wellington Zoo operating expenditure is over budget due to additional capital works being completed during 2008/09 following fundraising success - the earlier completion of capital works resulted in higher-than-budgeted depreciation and interest costs for 2009/10.

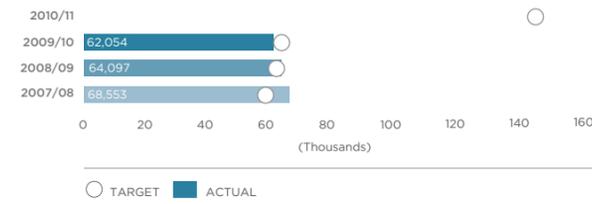
² The Marine Education Centre feasibility study is under way. However, it will be completed later than originally anticipated. This is reflected in spending being lower than budgeted.

Funding note: Operating expenditure for this activity is funded through general rates. (This contribution covers part of the costs of the trusts running the Zoo, Sanctuary and Marine Education Centre project. Those trusts also receive other income, for example from grants, sponsorships and entry fees).

HOW WE PERFORMED

We support the Zoo and Zealandia for their conservation roles and for their status as nature-based visitor attractions. We assess success on the basis of visitor numbers and completion of projects that enhance their appeal to visitors.

Zealandia – Karori Sanctuary visitors



Visitor numbers were affected by wet weather.

Source: Zealandia – Karori Wildlife Sanctuary Trust.

Zealandia – Karori Sanctuary education programme attendance

Result: 5,859 (target: 5,500).

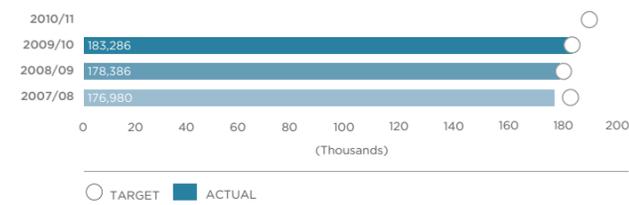
Source: Zealandia – Karori Wildlife Sanctuary Trust.

Zealandia – Karori Sanctuary visitor and education centre

Result: visitor centre completed (target: complete construction).

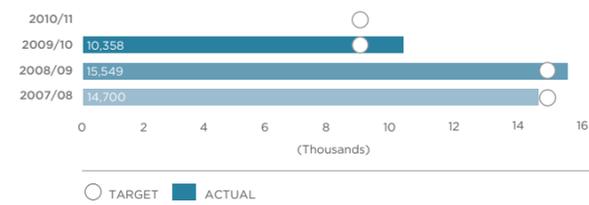
Source: Zealandia – Karori Wildlife Sanctuary Trust.

Number of visitors to the Wellington Zoo



Source: Wellington Zoo Trust.

Wellington Zoo education programme attendees



Source: Wellington Zoo Trust.

Wellington Zoo – capital programme

Result: Animal Hospital completed on time and on budget (target: complete Animal Hospital).

Source: Wellington Zoo Trust.

Wellington Zoo – Trust income

Result: The Trust generated income equivalent to 90% of the WCC grant (target: 87%).

Source: Wellington Zoo Trust.

Wellington Zoo – average WCC subsidy

Result: \$14.78 per visitor (target: \$14.71).

Source: Wellington Zoo Trust.

2.7 QUARRY

We own the Kiwi Point Quarry in Ngauranga Gorge, which every year provides hundreds of thousands of tonnes of aggregate to the local construction market for use in roading and other projects. The quarry is managed by an external contractor.

OUTCOMES

This activity contributes to the following outcome: more sustainable. In the context of this activity 'sustainability' refers to our aim to manage this valuable resource, minimise the environmental impacts of its extraction and, ultimately, restore and develop the area.

We use the city's ecological footprint and the amount of pollutants in the air as two indicators of progress towards sustainability. The contributing factors to these are many and varied. The quarry is only one – it impacts in two ways:

- As an extractive process: ecological footprint is a broad measure of resource use that highlights where consumption is exceeding environmental limits. For the period 2003–09, according to the Ministry for the Environment, Wellington's ecological footprint was 1.7 hectares per resident. The New Zealand average is 1.9 hectares per resident.
- Because of the negative effects of roading: the material extracted from the quarry is used in the local construction market for new roads etc. The by-products of road use include reduced air quality (the presence of particulate matter) i.e. microscopic particles of dust and other pollutants, which come from vehicle exhausts, roads, footpaths etc. As shown in the table, Wellington's results have remained within national standards/guidelines over the last three years.

AIR QUALITY – PARTICULATE MATTER (PM₁₀)

MICROGRAMS PER CUBIC METRE OF AIR				
	2007/08	2008/09	2009/10	National standard/guideline
Maximum	60*	46	31	Not exceed 50 for more than one day per year
Mean (annual)	14	13	13	Not exceed 20

* This was the only time PM₁₀ levels exceeded 50 during a year.
Source: Greater Wellington Regional Council.

WHAT IT COST

OPERATING EXPENDITURE (\$000)	ACTUAL 2010	BUDGET 2010	VARIANCE 2010	ACTUAL 2009
2.7.1 Quarry Operations				
Expenditure	204	285	81	148
Revenue	(456)	(398)	58	(449)
Net Expenditure	(252)	(113)	139	(301)

This activity is funded from income received from the sale of quarry products. This covers costs and returns a surplus to the Council.

HOW WE PERFORMED

We manage the quarry to meet the demands of the market and the city's infrastructure needs. Compliance with the quarry licence, resource consents, and the District Plan demonstrate our success in this area.

Aggregate (tonnes) produced from the Quarry

Results: 277,145 tonnes of rock for use on roads and other infrastructure were produced (compared with 307,000 tonnes in 2008/09). (Target: no target)

Source: WCC Infrastructure.

Compliance

Result: We achieved all resource consent, District Plan requirements, and quarry license compliance. (Target: achieve all compliance).

Source: WCC Infrastructure.