

Wellington City's

2010 draft Climate Change Action Plan

For Consultation

April 2010

APPENDIX 1

Foreword from Mayor Kerry Prendergast

Wellington City Council recognises the importance of climate change and the need for a comprehensive and cohesive response. This Action Plan sets us on a path to becoming a leading city in responding to climate change. Importantly, it not only addresses reducing emissions, but it also focuses on preparing for the impacts of a changing climate.

Some clear messages were heard at the recent *Climate Summit for Mayors* in Copenhagen, which I attended: we can't wait for national governments to take action and they can't solve the problem on their own – cities must act. While we need to demonstrate strong leadership, there is also a need for cooperation between Councils, business and the community. It was also clear that Wellington is well-placed compared to cities internationally – we are focusing on the right areas and taking the right steps.

Wellington City can be proud of our achievements on climate change since we first made clear commitments in this area. Retaining our compact urban form and encouraging more people to live in the central city has seen the percentage of vehicle commuting trips drop in favour of walking, cycling and public transport. We continue to invest in the city's public transport system through improvements to bus lanes and bus shelters. Our investment in urban renewal projects in identified growth areas will also facilitate high-quality residential and commercial development along key public transport routes. There is also progress with fitting the city's cold, damp homes with modern insulation and heating technology.

Wellington has real potential to be a leading world capital in reducing its environmental impact in response to climate change. This means playing to our strengths by utilising renewable energy resources; enhancing the compact nature of the city; developing an increasingly modern public transport system; enhancing our green spaces; encouraging green buildings; conserving our water resources; utilising our close links to government agencies and partnerships with academic and research institutions, our community, entrepreneurs and business people. Reducing energy costs – and thereby emissions – makes good sense and is increasingly providing competitive advantage to savvy businesses. Building on these advantages, Wellington has the opportunity to become *the* renewable energy capital.

I am excited by the challenge of implementing the actions in this plan. Clearly it doesn't deliver everything – evolving technology and the further development of central government policy will play a key role. The Council's approach calls for strong local leadership and partnerships at all levels, recognising that it will take a collective effort to deliver multiple benefits to the community and the economy, and to ensure a prosperous future. This Plan represents an important step to move Wellington city in the right direction. I look forward to working with all stakeholders to meet the climate change challenge.

Mayor Kerry Prendergast

Toitū te Rangi, toitū te Papa, toitū te tangata mauri ora

Existing sustainably in harmony with our environment

Meeting the challenge

Climate change is real and will impact all of us. Warming of the climate system is unequivocal, as evident from increases in global average air and ocean temperatures, widespread melting of snow and ice and rising sea levels. The world's leading climate scientists agree that it is very likely that human behaviour is accelerating climate change, and that the earth is already suffering the impacts.

Though they cover just 2% of the world's land mass, cities and urban areas are estimated to be responsible for 75% of all greenhouse gas emissions worldwide¹. Like other global challenges, no single country or city can do it alone.

However, as a city we have a responsibility to protect our citizens from the effects of climate change, and we must do our share in reducing greenhouse gas emissions. As the capital city we have a significant national leadership role to play.

For Wellington, climate change will create risks to public health, infrastructure, the economy and the environment. We have a role in managing risks from sea level rise, increased heavy rain events and managing water supply in dry conditions. These changes need to be recognised early to influence our planning responses and be properly managed.

We also have service responsibilities that are influential to reducing emissions such as urban planning and public space development; transport planning, transport networks and parking; and managing resource consent processes for developments as diverse as new housing to commercial scale wind farms.

Since 2004, Wellington City Council has been committed to the reduction of greenhouse gas emissions and planning for the impacts of a changing climate. Over the past few years, we have focused more on preparing the city for changes that may occur and the challenges we face. Our achievements include:

- aligning our development around public transport routes
- formulating policies to increase the use of public transport, walking and cycling, and encouraging the development of renewable energy
- developing accurate greenhouse gas inventories for our city and our organisation
- commencing emissions reduction programmes that target our day-to-day operations, such as energy-efficiency improvements
- assessing the vulnerability of parts of Wellington to sea level rise.

Overview of Wellington

Population: 190,500 (2007)

GDP (regional): \$21.372 billion (\$47,212 per capita)

Gross Emissions: 1,190,000 tonnes (6.2 tonnes per capita)

Net Emissions (includes forestry removals): 1,141,000 tonnes (6.0 tonnes per capita)

Wellington will reduce its emissions by 30% by 2020

Energy in the form of electricity, petrol, diesel, gas or aviation fuel produces 95% of Wellington's greenhouse gas emissions

Around two-thirds of the electricity we use is renewably generated

Wellington has the capacity to produce more than enough electricity from renewable sources to meet our own needs

60% of New Zealand homes do not meet insulation and heating standards, this equates to around 44,000 homes in Wellington

Council has supported 850 insulation retrofits in Wellington from 2006/7 to 2008/09 and dedicated an additional \$105,000 over three years to incentivise the government funded *Warmup New Zealand* scheme

Council has provided \$300 grants to 37 homeowners to install energy efficient appliances such as solar hot water heating

The Council's energy management programme is so far saving 60 tonnes of emissions per year

Council has supported the Wellington Home Energy Advice Centre which has provided advice to over 1,250 people from March 2008 to June 2009

85% of Wellington's landfill gas is captured and used to produce enough to power 1,000 households

17% of workers use public transport for their commuting journey

17% of workers walk, run or cycle to work

– these are both the highest rates in New Zealand

Commuting by public transport, walking, running or cycling increased by 6% between 1996 and 2006

Wellington's forests remove 50,000 tonnes of greenhouse gases from the atmosphere each year

The Council plants 100,000 trees and plants on Council land each year

The Council has the potential to receive 5,000 carbon credits by placing city forests in the government's *Emissions Trading Scheme*

Building on our strengths and achievements to date

By building on our achievements and strengths, Wellington is well placed to respond to climate change. There are several key areas for which we can use our competitive advantage to meet this complex and difficult challenge.

Compact city: Wellington City is known for its compact urban form and for being a 'walkable' city. Wellington's urban growth strategy focuses on locating development of housing and commercial activities along key public transport routes within the central city and suburbs. We call this our 'growth spine'. Between 1996 and 2006 the proportion of cars used for commuting dropped by 9%. Over the same period commuting by public transport, walking and cycling increased by 6%. This is due in part to the increase in apartment living in the central city.

Green belts: Wellington has long recognised the benefits of preserving areas for recreational purposes and, more recently, to restore the city's biodiversity and native ecology. Around 10 percent of the city (2,500 hectares) is currently being managed as (or reverting back to) native forest. We plant up to 100,000 trees and shrubs annually assisted by the hard work of volunteer groups to help the green belts of the city regenerate.

Renewable resources: The Wellington region has some of the world's best potential for wind and marine energy generation. The Council has created planning policies that encourage renewable energy development, which has seen Project West Wind (140MW) completed and two more wind farms planned. Combined these wind farms will have a total capacity of 222MW, which is sufficient energy to power about 110,000 average homes. Wellington's first marine energy project is also under development in Cook Strait.

Public transport and active travel modes: Wellington has the highest rate of public transport usage in New Zealandⁱⁱ. The central location of our railway and bus stations helps to create an integrated and convenient public transport network. Our compact city also results in the highest proportion nationally of commuters choosing to walk, run or cycle to workⁱⁱⁱ.

Research institutions and clean technology: Wellington is home to several universities and research institutes with expertise in climate change, clean technology research and development or staff who have been involved in the Intergovernmental Panel on Climate Change (IPCC) processes. The Centre of Excellence for Clean Technology being developed by Grow Wellington is utilising the expertise of these institutions and looking to attract additional skilled professionals to Wellington to help build capacity in this area.

More efficient homes: We have showed ongoing support for the insulation and heating retrofitting scheme that is funded by the Energy Efficiency and Conservation Authority. Initially our focus was on low-income households and recently our support has expanded to include all households. We also provide a \$300 grant to cover the building consent costs for households that install sustainable energy features such as solar hot water heaters.

Doing it together

A joint effort from all sectors is needed to meet the ambitious targets set out in this Action Plan. The Council will play a lead role in coordinating the various sectors and maintaining momentum on the Climate Change Action Plan. Internationally, Wellington will look to create ongoing relationships with other cities as well as key organisations like the C40 Climate Leadership Group.

Nationally, it is important that we partner with other metropolitan cities, research institutes, leading New Zealand businesses and key government agencies.

Regionally and locally, we will look to strengthen our partnerships with local authorities, key community groups, universities, Wellington businesses and of course, Wellington households.

The New Zealand Emissions Trading Scheme (ETS)

The ETS is the country's primary mechanism to ensure that greenhouse gas emitters take responsibility for their emissions. Forestry entered the ETS in 2008 and other industries will be phased in over the coming years. We will have direct liabilities associated with emissions from our landfill activities and indirect liabilities from increased energy costs. We also have opportunities under the ETS to generate carbon credits from our forest areas. These liabilities and opportunities will need to be managed effectively.

For the wider Wellington community – residents and businesses – costs from the ETS will be passed on, raising the price of goods and services. Households, businesses, industries and communities that reduce their carbon consumption will become more resilient. Those that do not respond will be more exposed to rising prices and are likely to find it more challenging to meet their aspirations.

The 2010 Climate Change Action Plan how we intend to face the challenges of climate change.

The Council's 2010 Climate Change Action Plan has a dual focus:

Adaptation	preparing for the impacts of climate change in order to safeguard the community, the environment and the economy from likely risks
Mitigation	reducing greenhouse gas emissions, or sequestering carbon dioxide in forests

Actions have been selected on the basis of a range of factors including:

- building on the progress achieved to-date on the 2007 Climate Change Action Plan
- the likely risks faced from climate change
- analysis of emissions and identification of priority sectors
- value for money
- proven levels of success elsewhere
- identification of co-benefits (such as job creation or improved health)
- advice from climate change experts and input from the Council's Environmental Reference Group (ERG)
- level of collaboration and interest from key partners locally, regionally and nationally
- identified gaps in current work
- ease of implementation.

The actions identified in the 2010 Climate Change Action Plan represent a pragmatic approach in responding to climate change, with scope for ongoing development. The actions provide the foundation for a more ambitious programme when reviewed as part of the 2012/22 Long Term Council Community Plan (LTCCP). They have been developed by considering international best practice, internal analysis and discussion and input from key external stakeholders.

The Climate Change Action Plan includes a number of previous commitments to key actions that have associated climate change benefits. For example, \$31m^{iv} is included in the 2009-19 LTCCP to implement bus priority projects, walking and cycling initiatives and the centre plans where we are facilitating compact growth around key public transport corridors and hubs like Adelaide Road, Kilbirnie and Johnsonville. These actions are included in the Action Plan as they are important components of the climate change response.

This Action Plan provides a summary of **what we are doing** and **what we intend to do** across seven action areas. The actions consist of five new funding proposals together with 29 initiatives to be achieved within existing resources. The seven key action areas are:

- (1) **Adaptation**
- (2) **Buildings and energy**
- (3) **Land transport**
- (4) **Waste**

- (5) Council operations
- (6) Forestry
- (7) Aviation

Objectives

Underpinning the seven action areas are several high-level objectives that guide Wellington's response to climate change and the Action Plan development. These objectives have links to the Council and community outcomes agreed in the 2009-19 LTCCP. Achieving these objectives will be fundamental to achieve our targets for reducing emissions and safe-guarding the city.

- **Resilient communities:** Wellington – our residents and businesses - will be well prepared for impacts from climate change.
- **Renewable energy capital:** Wellington City's renewable energy generation sources produce a net export of renewable electricity to the rest of the country to make Wellington a "Renewable Energy Capital"
- **Growing sustainable transport:** Wellington builds on its compact city form and high use of public transport by focusing development around existing centres where the percentage of trips made by walking, cycling and high quality, reliable public transport continue to increase while the percentage of trips made by car continue to decrease.
- **Early adopter of electric vehicles:** Wellington becomes an early adopter of electric vehicle technology with vehicles and charging technology accessible to users.
- **Centre of excellence for clean technology:** Wellington Region becomes a Centre of Excellence for Clean Technology, which helps to create jobs and investment in fields of building retrofits, technological development, renewable energy applications and waste minimisation.
- **Green office hub and capital:** Wellington's CBD is recognised as a hub for commercial green buildings and green building design innovation.
- **Warm, efficient homes:** Wellington's older housing stock is retrofitted and upgraded to create healthier living environments and more energy efficient homes.
- **A city of forests:** Wellington continues to expand forest networks on public and private land through natural regeneration of reserves and rural land, plantation forestry, planting in road reserves and tree planting along main streets and boulevards.
- **Resources from waste:** Wellington and our regional partners develop waste management systems that allow for commercially viable waste recovery to reduce waste to landfill and increase methane capture.
- **Carbon neutral vision:** Wellington strives towards a carbon neutral vision.

APPENDIX 1

New Funding Proposals

The following five proposed new initiatives focus on cost-effective measures for improving our preparedness for climate impacts and reducing Wellington's emissions. These specific measures will help us to address Wellington's vulnerabilities to climate impacts and achieve meaningful emissions reductions.

	Initiative (Action Area)	Purpose
1	Preparing for the impacts of climate change (A1) (Adaptation)	To identify parts of the city vulnerable to climate impacts and begin to plan for these risks. See page 11 for further detail
2	Piloting electric vehicles (T1) (Land Transport)	To encourage uptake of electric vehicles and raise awareness of their benefits. See page 19 for further detail
3	Council energy efficiency initiatives (C1) (Council)	To reduce emissions from energy consumption in Council operations. See page 22 for further detail
4	Business energy saver programme – eMission (BE2) (Buildings and Energy)	To reduce emissions from energy consumption by businesses. See page 16 for further detail
5	Home Energy Saver (BE1) (Buildings and Energy)	To reduce emissions from household energy consumption. See page 16 for further detail

(1) ADAPTATION TO A CHANGING CLIMATE

A range of impacts resulting from climate change will affect Wellington including:

- coastal hazards from sea level rise such as storm surge events
- difficulty in maintaining water supply in summer months due to reduced rainfall, higher temperatures and increased demand
- flooding, slips and high winds from extreme weather events, resulting in damage and disruption (e.g. damage to roading and property).

Council has a responsibility to protect residents, property and infrastructure from the impacts of climate change. It is imperative that climate change impacts are recognised early and risks are properly identified, planned for and responded to.

Our role in managing climate related risks includes designing stormwater systems and coastal defences that can withstand significant storm events, and managing water supply networks to cope with predicted increasingly frequent dry years. We must use climate change science to inform asset planning so that renewals, upgrades or new developments incorporate impacts from climate change and ensure the cost and risk is equitably shared between present and future generations.

Adaptation - what we're doing

Climate change implications: Research on the implications of climate change for Wellington City has been carried out, including:

- the impacts of long-term climate change on weather and coastal hazards for Wellington City
- the impacts of sea-level rise on our local highway and rail networks
- the likely impacts of climate change on water security and slope stability.

Climate-change activities: We will assess the impact of climate change in all major Council policy work or projects.

Potential rise in sea level: We have introduced design standards so that the city's stormwater outflow pipes can accommodate future sea-level rise. Scenarios for possible sea-level rise are being used to identify how best to plan the future development of the city.

Kilbirnie case study: We undertook a hazard mapping exercise in the Kilbirnie/Rongotai area for four different sea level rise scenarios to understand the risks to infrastructure, community facilities and private property in the Kilbirnie area. This study has helped Council understand risks and likely response options.

Developing resilient areas: We have developed areas such as Waitangi Park and coastal dune systems which have environmental benefits and protect surrounding areas from climatic events.

Adaptation - what we intend to do with new funding

A1- Preparing for the impacts of climate change

Summary of initiative

To continue to gather better information on Wellington’s vulnerability to climate impacts and develop an approach for responding to these impacts across the city and region.

Benefits

This initiative is about safe-guarding Wellington’s future and ensuring that informed thinking goes into asset management decisions. Through proper design of new assets or those scheduled for renewal or upgrade, we can reduce risks and adaptation costs can be shared across present and future generations.

Timeframes and costs for this work

A coastal study would be completed in partnership with the Wellington Regional Council at a cost of \$30k in 2010/11. This is to be followed by further detailed analysis across Wellington city, with particular focus on areas identified as most at risk. The specific risks and response options will be assessed involving input from expert consultants (\$100k 2011/12).

	2010/11 (\$000)	2011/12 (\$000)	Total (\$000)
OPEX*	\$30	\$100	\$130

* OPEX or Operational Expenses are the day-to-day expenses incurred through carrying out an activity, including staffing, administration, rental, utilities, consumables and maintenance costs.

Adaptation - what we intend to do within existing budgets

A2- Improve preparation for more frequent extreme weather events: Assess how well prepared the city is for extreme weather events.

A3 – Develop guidance for asset management on climate risks: Ensure that the city’s valuable assets are properly managed to deal with the likely impacts of climate change.

A4 – Engage with our communities: Take a lead in engaging on the likely impacts and develop options to respond in consultation with our communities.

A5 – Collaborate on adaptation approaches across local government: Promote a shared local government approach involving information sharing, consistency in approach and joint research projects and policy development.

A6 – Collaborate on adaptation approaches between local and central government: Work with government agencies on local issues and lobby for national approaches to key infrastructure including state highways, rail, airports and schools.

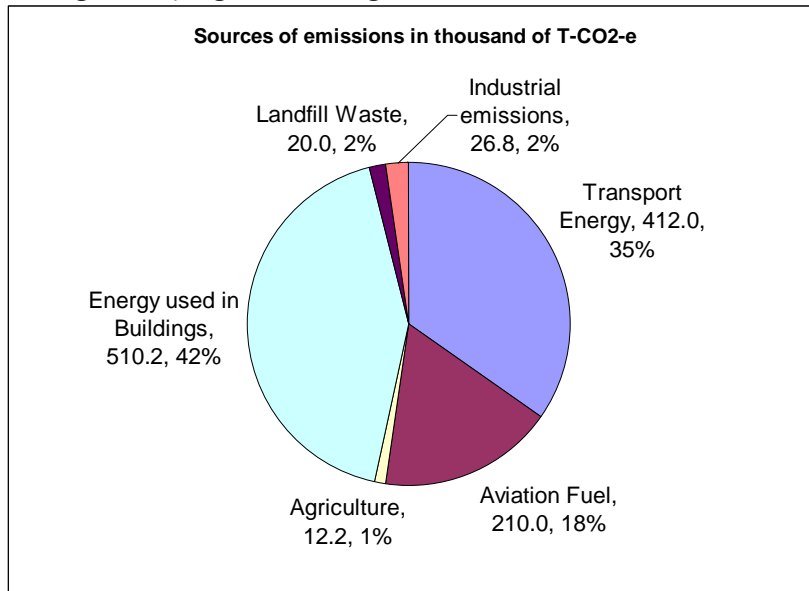
A7 – Investigate use of “green” roofs and more street vegetation to reduce stormwater run-off: Investigate opportunities when upgrading existing facilities and streetscapes as well as when constructing new buildings.

APPENDIX 1

MITIGATING THE CITY'S GREENHOUSE GAS EMISSIONS

More than 95 percent of Wellington City's 1.19 million tonnes of greenhouse gas emissions (gross) are derived from energy used in **Buildings, Land Transport and Aviation**.

Wellington City's greenhouse gas emissions in 2006/07 were as follows.



Other important emissions sectors are:

- **Waste:** Though it only represents around 2 percent of the city's total emissions the Council will have liabilities under the ETS to acquire emissions units to match our landfill emissions.
- **Council operations:** We are demonstrating leadership within the community by reducing our own emissions.
- **Forestry:** Forests remove carbon dioxide from the atmosphere and Wellington forests removed approximately 50,000 tonnes of CO₂-e (4% of the City's emissions) in 2006/07. We own a large amount of land that is eligible for carbon credits and has begun to receive credits under the ETS and can play a key role in highlighting the importance of forestry for private landowners.

Forecasting of emissions for Wellington city has been carried out on the basis of various scenarios including:

- **population growth**
- **emissions pricing**
- **oil prices**
- **GDP growth**
- **national inventory trends (projections for how the nation's emissions will grow).**
- **targets for renewable energy (between 78-90% of electricity supplied from renewable sources by 2020, which is up from the current proportion of 60-70%)**
- **plans to double the number of passengers by 2030 (as part of the *Wellington International Airport 2030 Master Plan*).**

The scenarios give us some understanding of how emissions might trend under business as usual scenarios as well as under various policy settings. Results indicate that by 2020

APPENDIX 1

emissions could decrease as much as 11% and increase from between 1% (high carbon prices) and 66% (high GDP growth) with an average 20% increase in the city's emissions. This is consistent with the forecasted trend for New Zealand's emissions, which is a 21% increase by 2020.

Our emissions reduction targets

It is important that Wellington's reduction targets realistically reflect both the scientific consensus views on reducing emissions as well as what the Council, its key partners and the community have agreed upon and are able to implement and achieve.

In 2007, Wellington City Council agreed to the following emissions reduction targets:

- Stabilise the city's emissions by 2010
- Reduce the city's emissions by 30 percent by 2020 (below 2001 levels)
- Reduce the city's emissions by 80 percent by 2050 (below 2001 levels)

We will be undertaking emissions measurements in 2011 to identify whether emissions stabilised in 2010. The Draft 2010 Climate Change Action Plan proposes an interim target to:

- Reduce the city's emissions by 3 percent by June 2013.

Our forecasting analysis shows that with growth in population and GDP (and under potential oil and carbon price scenarios), Wellington will have to achieve emissions reductions for existing activities and for future growth. This makes the challenge of reducing emissions even greater. Growth of the city – new homes, commercial buildings, more cars and freight, more air travel – has to be taken into consideration when considering emissions reductions. This means that policies and initiatives need to be put in place on national, regional and local levels in order to reverse the growth trend and start on the path of net emissions reductions for the city.

APPENDIX 1

(2) BUILDINGS AND ENERGY

42%	of Wellington's emissions are produced from energy used in residential, commercial, industrial and public buildings (2007)
1,549,000 Megawatt hours (8.1 Mwh per person)	electricity consumed in Wellington City (2007)
89%	of Wellington's homes were built before 2000
60%	of New Zealand homes built before 2000 have inadequate insulation and heating
63%	of energy in New Zealand homes used for space heating or water heating

The Buildings and Energy sector relates to the emissions created from the energy we consume in buildings and is used for heating air and water, cooking, lighting and appliances as well as powering industrial and manufacturing processes. There are three primary ways to reduce emissions from the Building and Energy sector:

1. Reducing energy consumption in *existing buildings* and increasing the uptake of renewable energy applications.
2. Reducing energy consumption in *new buildings* by using smart building design and more modern and efficient technology.
3. Reducing the emissions intensity of the electricity supply through greater uptake of renewable energy of various scales and improving the efficiency of New Zealand's coal and gas generation plants.

Buildings and energy – what we're doing

Renewable energy sources: We are encouraging new renewable energy initiatives, such as the recent development of Project West Wind in Makara (7km from the city centre) that can generate enough power for up to 70,000 average homes. Two more wind farms are planned that, together, will add enough power to supply 40,000 more homes. To put this in perspective, there are 74,000 residential properties in Wellington.

Home energy use: The City Council is providing additional funding to encourage uptake of the Government's *Warm Up NZ Scheme* by Wellington households. Government has boosted funding in the next four years for the scheme to fit around 180,000 houses across the country with modern insulation and heating. This equates to about 2,000 housing refits a year for Wellington City.

Home energy grants: Wellington City Council supports grants of up to \$300 towards building consent costs to homeowners who install energy efficient features to their property (including solar hot-water heating).

Home energy advice: Wellington City Council supports the Home Energy Advice Centre, which runs free phone and online services providing energy advice for our citizens.

Subdivision design guidance: We've provided design guidance for new subdivisions to encourage more use of energy-efficient building designs.

Solar energy: We've made it easier to install solar systems on rooftops through changes to our building regulations.

Green buildings: We've assisted the development of green buildings by recycling construction waste and by assisting with the building design process. Some recent projects including the new BNZ building, the Meridian building and the refitted DoC building have achieved Level 5 Greenstar certification.

Clean technology centre of excellence: The Wellington region is aiming to develop a leading clean technology centre of excellence. Initial opportunities include:

- establishing a marine energy research and development site to trial technologies (in partnership with the European Marine Energy Centre)
- investigating electric-vehicle technology for the city's bus network
- developing waste-to-energy technologies for sewage sludge and plastics.

Buildings and energy – what we intend to do with new funding

BE1 - Home Energy Saver Programme

Summary of initiative

This initiative aims to reduce emissions associated with household energy consumption by establishing a programme to provide incentives to households for low-cost energy retrofits, for example energy efficient lighting, low-flow shower-heads and hot water cylinder wraps. The initial performance target being considered is to retrofit between 1,000 and 1,500 homes per annum with at least one of the options identified above. This project provides a cost-effective tool to help households:

- reduce energy consumption
- reduce greenhouse gases associated with energy consumption
- reduce energy costs
- engage and empower Wellingtonians to take action on climate change.

Timeframes and costs for this work

The funding for this initiative would be used for subsidising and promoting energy retrofits in households. We will establish partnerships with providers that can deliver the retrofits. The full year cost of the scheme will be \$100k in 2011/12.

	2010/11 (\$000)	2011/12 (\$000)	Total (\$000)
OPEX	\$50	\$100	\$150

BE2 - Business Energy Saver Programme

Summary of initiative

This proposal involves a 2-year commitment to the eMission programme, which helps Wellington businesses reduce their carbon footprint, reduce waste and attain a recognised certification for environmental performance. Many businesses struggle to make progress on sustainability issues due to lack of guidance, information and tools while others simply do not have the resources. By providing support to eMission, the Council would be:

- engaging Wellington businesses to reduce emissions and resource use
- demonstrating leadership by supporting a sustainable business community
- developing 'business leaders' in the city that can help influence their respective sectors to adopt more sustainable practices.

Timeframes and costs for this work

The funding for this initiative would subsidise and promote workshops, audits and incentives for business involved in the programme. The Council would seek for about 55 Wellington businesses to access the programme annually.

	2010/11 (\$000)	2011/12 (\$000)	Total (\$000)
OPEX	\$25	\$25	\$50

Buildings and energy – what we intend to do within existing budgets

BE3 - Business partnerships: We will engage with commercial building owners, property managers, government departments and the hotel industry to develop a programme of voluntary energy savings. The programme will start with ‘quick wins’, such as policies to turn off appliances overnight, commitments to upgrade office lighting and simple ‘building tuning’ changes to reduce energy consumption.

BE4 - Energy efficiency standards: We will investigate regulatory and non-regulatory approaches to improve energy efficiency of new buildings and building upgrades. We will also advocate for:

- **BE5 - a 90 percent renewable energy target:** A New Zealand target for total national electricity supply by 2025. Given Wellington’s renewable resources, this is likely to lead to investment and job creation.
- **BE6 - higher energy efficiency standards in the Building Code:** To ensure that standards for new builds are highly energy efficient while remaining cost effective.
- **BE7 - home energy ratings:** A national energy efficiency rating scheme for housing for both homeowners and landlords, allowing for informed decisions by prospective purchasers or renters.
- **BE8 - feed-in tariffs:** Encouraging more investment in small-scale renewable energy by increasing the financial return households and businesses receive when they feed electricity back into the grid from applications such as solar energy or small scale wind power.

(2) Land transport

35%	of Wellington's emissions are from land transport
45%	of commuting trips are made by car, truck or van
17%	of commuting trips are made by public transport
17%	of commuting trips are made by walking or cycling
70%	of Wellington's workforce is located in the central city
126,668,750 litres (665 litres per person)	petrol used in Wellington (2007)

The Land Transport sector relates to the emissions created from all forms of land-based transport, including cars, trucks, buses, trains and motorcycles. The sources that make-up the sector are diesel, petrol and LPG. Actions for reducing emissions in the transport sector relate to two broad areas:

1. Reducing road travel
2. Improving vehicle fuel efficiency and adopting new fuel technologies.

Land transport – what we're doing

Compact city growth: We are consolidating growth within our existing centres and along public transport routes – what we call our 'growth spine'. Around \$11m^v has been agreed on plans for Adelaide Road and Johnsonville over the next ten years. The funding is for improving infrastructure, re-designing roads and establishing policies that facilitate mixed-use development.

Bus services: We are spending \$7m on a 10-year programme to expand the city's bus-lane network through the central city and on other key routes. In addition, services at bus stops providing time-of-arrival and other network information will be trialled for key bus routes.

Travel planning: We're working with local schools and businesses to develop travel plans to encourage a further shift from private vehicle trips to public transport, walking, cycling and carpooling.

Walking and cycling: We are spending \$13m over the next 10 years on infrastructure to increase walker and cyclist safety and enjoyment, encouraging workers to choose these options for their journey to the central city.

Electric vehicles: We're preparing policies to facilitate electric-vehicle infrastructure, such as battery-charging facilities in public spaces.

Travel demand: We're developing the city's broadband infrastructure in partnership with the Government and the private sector, allowing more people to work from home.

Land transport – what we intend to do with new funding

T1 - Electric vehicle pilot

Summary of initiative

This proposal involves developing a pilot for electric vehicles (EV's) in Wellington with a focus on:

- featuring EV's in selected company fleets
- making EV's available for hire in prominent tourist localities, such as Wellington Airport and cruise ship terminals (in season), particularly in conjunction with RWC2011 (from Sept 2011).

The most significant gains to be made with reducing emissions from the transport sector relate to changing vehicle technology, either through more efficient engines or new fuels.

The primary objectives of the pilot are:

- encouraging EV uptake in Wellington in order to influence medium to long-term reductions of greenhouse gas emissions from the transport sector
- positioning Wellington as a leader in responding to climate change
- gathering information and data about benefits, issues and risks relating to using EV's
- raising awareness and improving perceptions of EV's
- providing a welcoming environment and market for EV's
- supporting businesses taking a lead in environmental issues.

Timeframes and costs for this work

It is estimated that \$50k for 2010/11 would be required with funding targeted at purchasing or leasing electric vehicles and possible features such as installing charging facilities, parking, signage.

	2010/11 (\$000)	2011/12 (\$000)	Total (\$000)
CAPEX*	\$50	---	\$50

* CAPEX or Capital Expenditure is expenditure to purchase fixed assets, such as plant, property or equipment.

Land transport – what we intend to do within existing budgets

T2- Road-pricing instruments: We will work across the region to investigate the potential of road-pricing instruments.

T3 - Fuel efficiency: We will advocate to Government for higher fuel-efficiency standards for new vehicles and used-vehicle imports.

T4 - Advocacy for new transport fuels: We will advocate Government for support for electric vehicles and second generation biofuels to increase their rate of entry into the market place.

T5 - Quality public transport: We will support continued development and investment in public transport networks and advocate for the Government to do likewise.

(3) Waste

2%	of Wellington's emissions are from waste
73,200 tonnes (0.4 tonnes per person)	total waste landfilled (2007)
33,500 tonnes	waste material recycled (2007)
31% ^{vi}	of all waste recycled in Wellington

When organic waste breaks down in a landfill it produces methane emissions, which have an impact 21 times greater than carbon dioxide in terms of greenhouse effects. Though emissions from waste are only a small proportion of Wellington's emissions, the Council has direct liabilities under the ETS because of our ownership in both the Southern Landfill in Brooklyn (100%) and Spicer Landfill in Porirua (22%). The liability requires the Council to surrender emissions units to the Government for all emissions from waste disposed of at our landfills. In addition, we have obligations to reduce waste under the Waste Minimisation Act (2008).

Waste – what we're doing

Renewable electricity generation: We've partnered with Todd Energy to help establish a landfill-gas-to-electricity plant that collects methane and runs it through a 1MW generator, producing enough power to supply about 1,000 households.

Composting service: We run a garden-waste composting operation for the city's organic waste. We also provide the *Kai to Compost* food-waste collection service to supermarkets, restaurants and cafes in the central city.

Recycling service: We provide a household recycling programme where kerbside bins are collected weekly. This is used by 81 percent of Wellington residents. We have also recently provided public recycling bins in the central city.

Waste – what we intend to do within existing budgets

W1 - Electricity generation: We're examining the potential of using new technology to convert sewage sludge into energy. If successful this could reduce total landfill waste at a low cost.

W2 – Product stewardship: We will be advocating for product stewardship schemes for priority waste products to make sure producers and consumers (not ratepayers) take on more of the burden for managing waste.

W3 - Waste reduction: The Council will be working under national legislation – the 2008 Waste Minimisation Act – to develop new and innovative projects that reduces waste going into the landfill pursuing a collaborative regional approach

APPENDIX 1

(4) Council operations

43,000 tonnes of CO ₂ -e	emissions associated with Council operations: excluding forestry (2008)
46%	of Council emissions from landfill operations
23%	of Council emissions from facilities and street lighting
13%	of Council emissions from water and waste water systems
7%	of Council emissions from the vehicle fleet
\$6 million	spent on energy for Council operations
31,600 million litres (166,000 litres per person)	of water consumed in Wellington (2007)

Council owns, manages and delivers a range of services to the community. Many of these activities directly or indirectly produce greenhouse gas emissions. The major sources of emissions for Council operations are the landfill and the energy used to run our services such as the Council offices, pools, water treatment and pumping, streetlights and the Council's fleet.

Council operations – what we're doing

Energy efficiency: We've invested in energy-saving opportunities across all of our activities. Recent projects include installing solar hot-water heating, energy efficient internal lighting and new street-lighting technology. We are also developing renewable energy projects for our facilities, which includes solar panels.

Vehicle fleet: We are completing a review of our fleet to increase the fuel-efficiency of vehicles and to reduce the number of vehicles the Council owns.

Staff travel: A Council-wide travel planning programme is being developed to reduce the number of single passenger vehicle trips made by staff and to investigate transport alternatives.

Waitangi park turbine: We partnered with Vector Ltd (now Wellington Electricity) to install a micro wind turbine in Waitangi Park to test the performance of small scale wind energy in urban settings.

Leak detection programme: We invest in leak detection for the Council's water network, which helps reduce energy used for unnecessary pumping and treatment of water.

Council operations – what we intend to do with new funding

C1 - Council energy efficiency initiatives

Summary of initiative

This proposal involves further investment in energy efficiency initiatives to reduce energy consumption and greenhouse gas emissions associated with Council buildings and assets. Effective energy management planning will help the Council reduce the costs associated with Council activities and demonstrate Council leadership in tackling climate change by addressing its own emissions.

Timeframes and costs for this work

This initiative will involve additional capital expenditure of \$50,000 in 2010/11 and \$150,000 in 2011/12. It also increases the operational expenditure by an additional \$25,000 per annum to be used for energy assessments, audits and design work. The initiatives will pay for themselves with operational energy savings over time.

	2010/11 (\$000)	2011/12 (\$000)	Total (\$000)
OPEX	\$25	\$25	\$50
CAPEX	\$50	\$150	\$200

Council operations – what we intend to do within existing budgets

C2 - Vehicle fleet: We will pilot GPS technology to improve fleet management and reduce fuel consumption.

C3 – Investigate options for renewable energy projects: We will identify opportunities to deploy renewable energy on our land and our facilities.

C4 – Carbon Management Policy: We will develop a policy to manage our liabilities under the ETS for the landfill as well as how we manage carbon credits from our forest assets.

C5 – Development tools: We will investigate development tools that assist us in achieving outcomes for quality urban design, architecture and energy efficiency.

C6 - Engage with our communities: We will engage with communities on climate change – through a programme of meetings, e-newsletters, events and workshops to encourage behaviour shifts in relation to energy efficiency, transport habits and reducing household waste.

C7 - Water conservation: We plan to reduce water consumption across Wellington City. The electricity used to treat and pump water for Wellington city accounted for around 6% of the Council’s organisational emissions. Reducing water demand will therefore reduce the Council’s carbon footprint.

(5) Forestry

50,000 tonnes	of Co ₂ sequestered by forests in Wellington
4%	of Wellington's emissions are offset by forestry
5,000	potential carbon credits available to the Council through Government programmes
2,500 Ha	of Council owned reserve land
3 tonnes/ha	of Co ₂ sequestered from native forests
34 tonnes/ha	of Co ₂ sequestered from pine plantations

A forest sink actively removes carbon dioxide from the atmosphere through the process of photosynthesis. The activity of a forest sink is sometimes referred to as sequestration. The Government has established the Emissions Trading Scheme (ETS) and Permanent Forest Sink Initiative (PFSI) that provides carbon credits to eligible forest owners that match the amount of carbon dioxide sequestered (one carbon credit for every tonne of carbon dioxide removed from the atmosphere). Though all trees and forests sequester carbon dioxide, only forests larger than 1ha that were established after 31 December 1989 are eligible for carbon credits from the Government.

Forestry – what we're doing

Forest sinks: We have begun the process of placing Council reserves and pine forests into Government forest-sink schemes. We have the potential to receive around 5,000 carbon credits annually from our forest areas.

Reserve planting: We plant around 100,000 trees and shrubs annually in scenic reserves, on stream banks and alongside roads.

Forestry – what we intend to do

F1 - Forest sinks: We will be working with our rural communities to promote forest sinks on private land. We will also investigate the development of additional Kyoto-compliant forest sinks as a cost-effective tool to meet our ETS liabilities.

F2 - Pest management: We will identify whether carbon sequestration would be increased if efforts were bolstered to remove introduced pests.

F3 - Local government partnerships: We will investigate opportunities to develop forest sinks with other councils to meet respective ETS obligations.

(6) Aviation

18%	of Wellington's emissions are from the aviation sector
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Wellington International Airport plays a vital role in Wellington's success as a modern economy and vibrant and cosmopolitan city. It is an important gateway to the region for residents, visitors, and businesses and connects Wellington City domestically and to the world. We believe that technology development will be the primary mechanism to reduce emissions in this sector, in line with other sectors such as transport (e.g. electric vehicles) and buildings and energy (e.g. renewable energy development).

The aviation industry has acknowledged the contribution of the sector to global emissions and is taking steps to address the problem. Members of the International Air Transport Association (IATA) have recently agreed to ambitious targets for the sector, which include: carbon-neutral growth by 2020, 50 percent reduction in emissions by 2050, and 1.5 percent annual average efficiency improvement from 2009–2020. Air New Zealand has been at the forefront of trialling new approaches to reduce emissions in its aircraft fleet.

Aviation – what we intend to do

AV1 - Memorandum of Understanding: As a first step, we will establish a Memorandum of Understanding with Wellington International Airport Ltd regarding managing aviation emissions and identifying emissions-reduction opportunities within airport operations.

AV 2 – Airline advocacy: We will advocate to airlines to increase their utilisation of fuel efficient airline technology, alternative fuels and more efficient flight plans.

APPENDIX 1

Supporting information

We wanted to keep the draft 2010 Climate Change Action Plan short and to the point so that it is easy for residents and other key parties to take-in. However, if you need more information on the Council's climate change response, you can access supporting material by visiting the Council's website www.wellington.govt.nz.

Have your say!

The draft 2010 Climate Change Action Plan is what the Council is proposing to do. Now we want to hear from you – do you agree with the actions? Should the Council be doing more or is it too much? We encourage you to give us your feedback so that together we can create a shared vision for the future of Wellington. You can fill in the submission form attached below, complete an online submission form or send an email to us at climate.plan@wcc.govt.nz.

Climate Change Action Plan – submission form

Please use this form to give us your views about the Wellington City Council's Draft 2010 Climate Change Action Plan.

You can have your say:

- Online at www.Wellington.govt.nz
- By sending an email to: climate.plan@wcc.govt.nz
- By making a submission on this form and sending it to:
 - Freepost 2199, Draft Climate Change Action Plan, Wellington City Council, Wellington 6140
 - Fax to 801 3231

Submissions close 5pm, 10 May 2010.

I am making a submission

As an individual

On behalf of an organization

Name of organisation

___ I would like to make an oral submission

Enter your name and contact details

Mr/Mrs/Ms/Miss/Dr (circle which applies)

First names*

Last names*

Street address*

Phone

Home

Mobile

Email

Note * Mandatory fields (please use block capitals). All submissions (including name and contact details) are published and made available to elected members of the Council and the public. Personal information supplied will be used for the administration of the consultation process. All information collected will be held by Wellington City Council, 101 Wakefield Street, Wellington. Submitters have the right to access and correct personal information.

1. **Do you support the overall approach of the 2010 Draft Climate Change Action Plan?**
2. **Do you think the Council is focusing on the right areas and projects in its response to climate change?**
3. **Do you think the Council has the right package and priorities for the five new initiatives recommended in the Action Plan?**
 1. **Vulnerability Assessment - Preparing for climate change impacts**
 2. **Electric Vehicle Pilot Project**
 3. **Council energy management programme**
 4. **Business Energy Saver Programme – eMission**
 5. **Home Energy Saver Programme**
4. **What opportunities or risks does each new project offer? How will these projects benefit you, your organisation or the wider community?**
5. **What is the highest climate change priority for you?**
6. **Do you agree with the emissions reduction targets of the Action Plan?**
7. **Do you disagree with any of the actions proposed in the Action Plan?**
8. **What do you think of the Council's proposed response to climate change? (too much, about right, not enough)**
9. **What information would you find valuable or that would assist you to take action?**
10. **Would you like to get involved in assisting the Council to respond to climate change issues?**

APPENDIX 1

11. Please add any other comments:___

APPENDIX 1

Contact information

If you would like more information about Wellington City Council's Climate Change Action Plan please send an email to climate.change@wcc.govt.nz or contact us at:

Climate Change Action Plan
Wellington City Council
PO Box 2199
Wellington 6140

Phone: + 64 4 803 8373
Fax: +64 4 801 3231

If you want more general information on Wellington or the Wellington City Council go to our website at www.wellington.govt.nz.

ⁱ C40 Cities: Climate Leadership Group. <http://www.c40cities.org/about/goals.jsp>

ⁱⁱ In 2006, public transport (bus or train) was used for commuting journeys by 17.1% of Wellington city workers, compared with 13.5% for Lower Hutt city, 8.3% for Auckland city, 4.8% for Waitakere city, 4.1% for Christchurch and 2.7% for Dunedin city (Source: Census 2006)

ⁱⁱⁱ In 2006, walking, running or cycling to work made up 17.4% of commuting journeys for Wellington city workers, compared with 5.2% for Lower Hutt city, 7.8% for Auckland city, 3.1% for Waitakere city, 9.6% for Christchurch and 10.2% for Dunedin city (Source: Census 2006)

^{iv} Excluding NZTA subsidy of \$13m

^v Excluding NZTA subsidy of \$4m

^{vi} Only includes waste handled by the Council and does not include recycling collected from private waste companies.