Te Atakura First to Zero

Wellington City's Zero Carbon Implementation Plan 2020–2030

Absolutely Positively **Wellington** City Council

Me Heke Ki Pōneke

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Executive Summary

Wellington City Council is committed to ensuring Wellington City becomes a net zero carbon city by 2050 - including making the most significant reductions this decade to help limit global temperature increases to 1.5 Celsius above pre industrial levels.

This Implementation Plan will guide the first stage of our journey to become a net zero carbon city and achieve a 43% reduction in the city's emissions by 2030. This Plan contains four key action areas which will be underpinned by a climate action measurement framework and strong partnerships.

Action areas to become a zero carbon city:

This plan includes 28 committed and recommended actions with associated GHG reductions that can be measured. These actions will result in an estimated 14% reduction in GHG emissions at 2030. Several actions with GHG reductions that cannot be measured are also included in this plan, these will enable or accelerate GHG reductions across the City. If Central Government contributes the necessary policies, regulations and funding to enable a high uptake of electric and fuel efficient vehicles, and an increasing amount of renewable electricity generation in the national grid there is potential to reduce city-wide GHG emissions by a further estimated 10% - bringing total GHG reductions to an estimated 24%.

Alongside committing to all our measurable actions, further actions and investments by Council are needed to achieve a 43% reduction in the City's emissions by 2030. Council cannot achieve this reduction alone. Collaborating with Central Government, partnering with iwi and working with other local authorities and our entire community is critical. We must act quickly to both engage with others and assess further potential actions against our climate action measurement framework to develop a recommended pathway forward.

About this plan

In June 2019, the Council joined hundreds of other cities around the world in declaring a state of climate change and ecological emergency. By declaring a state of emergency, Council accepted scientific evidence that we must take urgent action within the next decade to limit the global average temperature increase to 1.5°C above pre-industrial levels in order to avoid disastrous consequences. Council also adopted *Te Atakura - First to Zero*, building on Council's Low Carbon Capital Plan. Te Atakura formalises our ambitious reduction targets and lays out a strategic blueprint for how Wellington city can approach climate issues over the next decade.

This Implementation Plan will guide the first stage of the journey to become a net zero carbon city and achieve a 43% reduction in the city's emissions by 2030. It provides the framework to ensure actions are delivered that reduce GHG emissions and create meaningful co-benefits for our city and communities. These co-benefits include warmer and healthier homes, safe and diverse modes of sustainable transport, and a city resilient to severe weather effects.

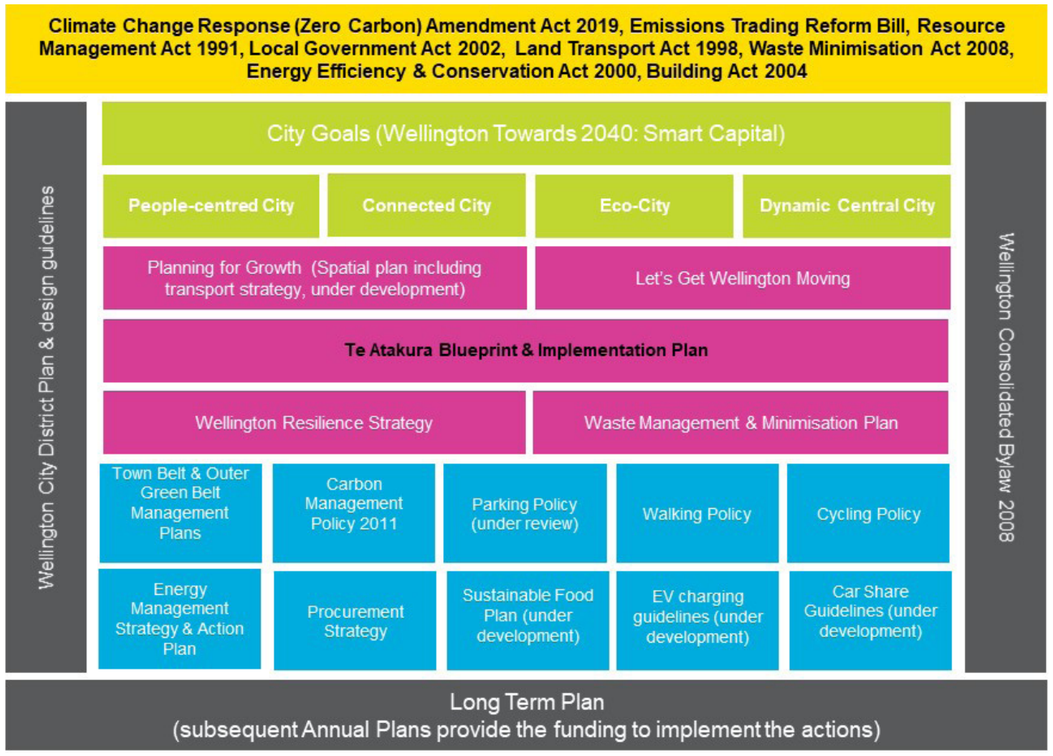
This plan is about action and change. Wellingtonians have proven resilient in the face of profound change before, notably in relation to earthquakes and most recently with the Covid-19 pandemic. One of the unintended consequences of Covid-19 is that global GHG emissions are expected to drop by around 8% in 2020[1]. This 8% drop is roughly equivalent to the annual global emissions reductions needed this decade to limit warming to less than 1.5C above pre-industrial temperatures. Our transition to a low carbon future cannot have the high cost to human wellbeing and livelihood that Covid-19 is having however, Covid-19 has proven that strong government direction and individual behaviour change can rapidly decrease GHG emissions. The challenge before us is to continue on a rapid GHG emissions reduction trajectory while increasing human equity, wellbeing and resilience, and enhancing natural capital, economic innovation and ecosystem services.

Achieving our climate change goals is no easy task and we cannot do it alone. Creating a zero carbon future is only possible with the whole-hearted support of the entire community. Council is committed to collaborating with other local authorities, central government, mana whenua, NGOs, institutions, businesses and communities. By working together, we can create a zero carbon and resilient Wellington that is better for everyone.

Linkages with other strategic plans, policies and commitments

The following diagram provides a snapshot of the related strategic plans, policies, guidelines and legislation that guide Council decision making and play a key role in our transition to a net zero carbon city.

Figure One: Linkages to other key regulations, policies, strategies, plans & guidelines



Wellington's climate future

Projected climate changes and significant impacts for Wellington

Wellington City is exposed to a range of climate-related impacts. Wellingtonians are already familiar with the impacts of heavy rain events and storm surges. For example:

- Huge waves hit Wellington's south coast in April 2020 damaging private and public property.
- In February 2018, Makara Beach was pummelled by ex-Cyclone Gita when an aggressive storm surge swept through the village flooding homes and destroying property.

These climate change impacts are expected to increase in frequency and severity. The IPCC forecasts that sea levels in New Zealand will rise by about 30 centimetres by 2065, which means that Wellington can expect current '1 in 100-year events' for high water level to occur yearly[2].

NIWA[3] reports on emerging climate change extremes estimate that Wellington City will experience:

- Sea level rise and storm inundation - threatening low-lying areas of Wellington's central city - affecting public and private infrastructure and buildings
- Increases in mean temperature up to 1°C by 2040, and 2.5°C by 2090 under business as usual scenarios
- Longer dry spells and shorter wet spells - placing increasing pressure on water resources
- Increased rainfall during extreme rainfall events - placing more pressure on urban water infrastructure and impacting homes and transport networks
- Increases in windy days
- Risks to biodiversity due to habitat changes and sea level rise
- Establishment of new exotic pests, weeds and diseases because of changes to temperature (air and water) and rainfall patterns.

Coastal hazards and climate change guidance for Local Government

The Ministry for the Environment's (MfE's) 2017 Coastal Hazards and Climate Change guidance for Local Authorities[4] determines what level of sea level rise local government should plan for - up to 100 years out for major infrastructure. In adopting this guidance for use in analysing Council's own assets, and for use in our adaptation plan for the city, we would take a critical first step in creating consistency across Council in terms of what we plan for. This consistency would bring national guidance to our approach. *Table One* below details the minimum transitional New Zealand-wide sea level rise (SLR) allowances and scenarios for use in planning instruments. For more information refer to *Appendix One*.

Table One: Minimum transitional New Zealand wide SLR allowances and scenarios for use in planning instruments where a single value is required at local/district scale while in transition towards adaptive pathways planning using the New Zealand-wide SLR scenarios

Category	Description	Transitional response
A	Coastal subdivision, greenfield developments and major new infrastructure	Avoid hazard risk by using sea-level rise over more than 100 years and the H+ scenario (i.e. 1.36m SLR)
B	Changes in land use and redevelopment (intensification)	Adapt to hazards by conducting a risk assessment using the range of scenarios and using the pathways approach.
C	Land-use planning controls for existing coastal development and assets planning. Use of single values at local/district scale transitional until dynamic adaptive pathways planning is undertaken.	1.0m SLR
D	Non-habitable short-lived assets with a functional need to be at the coast, and either low-consequence or readily adaptable (including services).	0.65m SLR

Wellington city's GHG emissions inventory

Emissions pathway 2001 to 2019

Since 2001, GHG emissions for Wellington city have been measured using the Global Protocol for Community-scale Greenhouse Gas Emission Inventory (the GPC)[5]– a robust framework for accounting and reporting city-wide GHG emissions. Wellington city's emissions fell by 7%, from gross 1,135,995 tonnes of carbon dioxide equivalent (tCO2e) to gross 1,061,383 tCO2e (-74,612 tCO2e) between 2001 and 2019. Net emissions fell by 6%. The slightly lower change in net emissions is due to a rise in emissions from the harvesting of exotic forests.

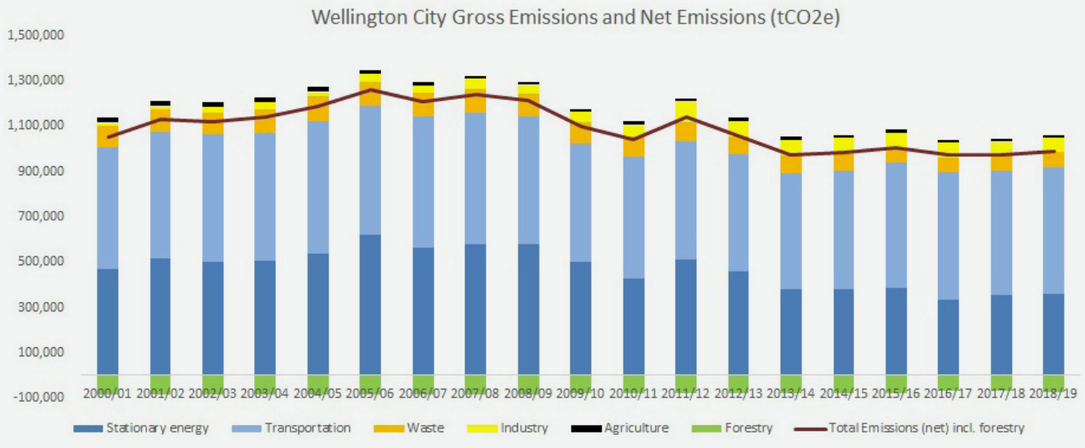
Agriculture, waste and stationary energy emissions reduced between 2001 and 2019 by 37%, 32% and 23% respectively:

- Agriculture emissions reduced more than any sector mainly due to a reduction in the number livestock animals farmed within the city area.
- The use of landfill gas capture has driven the fall in emissions from waste.
- Greater use of renewable energy in the national grid to provide electricity has reduced the influence of stationary energy on total emissions.

Transport emissions and industry emissions both increased between 2001 and 2019 by 4% and 419% respectively:

- Air travel emissions increased the most in the transport sector up 45% and on-road diesel emissions rose by 38%.
- In the industrial sector most emissions are caused by industrial refrigerant use. The increase in the industrial refrigerant use follows developments at the national level where emissions have risen.

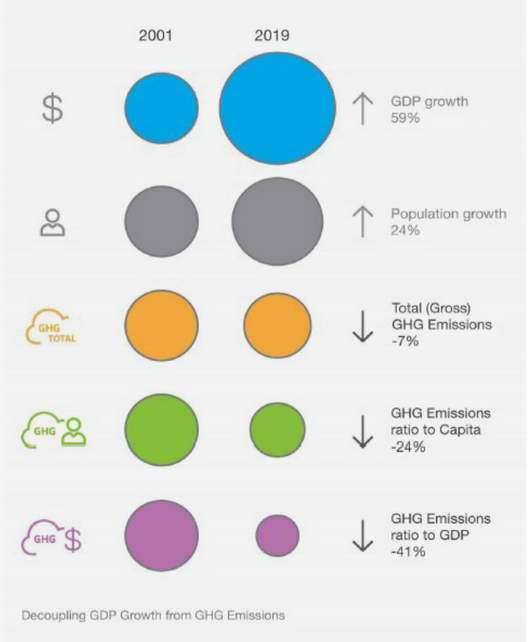
Figure Two: Emissions per year showing gross and net from 2001 to 2019



Total gross emissions have reduced by 7%, against the backdrop of a 24% growth in population within Wellington city. Per capita emissions have fallen roughly in line with the rise in population observed. These measures also indicate the beginning of a decoupling relationship between Gross Domestic Product (GDP) growth and emissions - meaning emission reduction has occurred without harming economic wellbeing. The changes in emissions and GDP illustrated in *Figure Three* suggest at a high-level that decoupling has occurred in the last two decades. GDP was 59% higher in 2019 than in 2001, while emissions per unit of GDP declined by 41%.

Wellington's population is forecasted to grow by an additional 50,000 to 80,000 people over the next 30 years. The challenge before us is to direct growth to the right places and ensure our growing population does not adversely impact GHG emissions.

Figure Three: Change in GHG emissions compared to GDP & population growth



2019 Emissions profile

In the 2018/19 reporting year, Wellington city emitted gross 1,061,383 tCO2e. This equates for approximately 25% of the Wellington region's emissions, and just over 1%[6] of New Zealand's total gross emissions. After consideration of carbon sequestration (carbon stored in plants or soil by forests), Wellington city emitted net 986,196 tCO2e emissions.

Transportation was the highest emitting sector, producing 53% of the city's emissions. Most of these emissions (66% of the sector) can be attributed to on and off-road transportation (petrol and diesel) within the city. The rest are produced by Wellington city's share of the emissions associated with air, rail, LPG and bus electricity and port activities.

Stationary energy was the City's second highest emitting sector, producing 34% of the city's emissions. Fifty percent of these emissions are from electricity - although with increasing use of renewables in the national grid these will continue to decrease. Almost 40% of these emissions are from natural gas (37%), and stationary petrol and diesel use making up the remainder.

Waste, industry and agriculture are minor sources of emissions comprising 6%, 6% and 1% of the city's emissions respectively.

Consumption based emissions

The GPC Emission Inventory primarily focuses on GHG emissions produced within the city boundary, including energy use, electricity consumption, heating and cooling, and the treatment of waste. Council acknowledges that Wellington - like other cities - also contributes to the production of significant quantities of GHG emissions from goods and services produced elsewhere but consumed by Wellingtonians. Consumption based emissions include food, clothing, electronic equipment and construction materials.

Figure Five illustrates the consumption-based carbon footprint of the document author, who is a Wellington resident. While food emissions dominate the illustrated consumption-based footprint, agriculture emissions are only responsible for 1% of Wellington city's GPC community-based carbon footprint. Council will produce a consumption based GHG inventory for the city so our community can better understand Wellington's consumption-based emissions, and help contribute to GHG reduction activities beyond Wellington city.

Figure Four: Wellington city's gross emissions split by sector

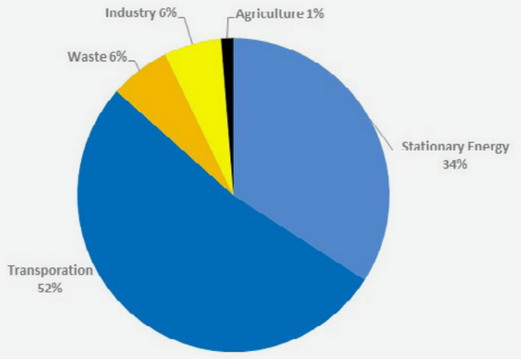
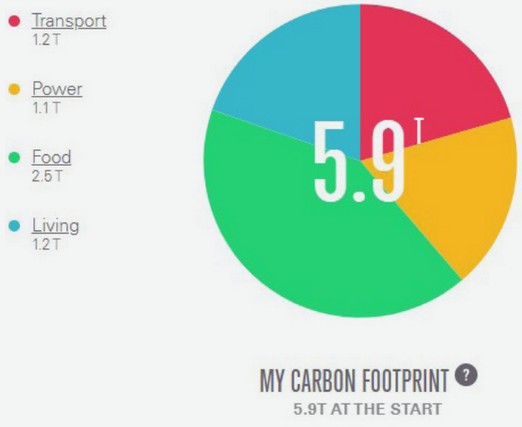


Figure Five: Example of an individual's consumption based footprint



The city targets

Council has committed to ensuring Wellington is a net zero emission city by 2050, with a commitment to making the most significant cuts (43%) in the next 10 years. This aligns with the objective of the Paris Agreement to limit global temperature rise to well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels. Because GHG emissions remain in the atmosphere for generations, frontloading GHG reductions is critical to keeping global temperatures from rising above 1.5°C. If we wait to dramatically reduce the City's emissions, we will have lost the opportunity to help limit global temperature rise.

Net zero carbon for Wellington city means that the net GHG emissions associated with activities that occur within the Wellington City Council local government boundary are equal to zero. To achieve this goal the Council and the community will have to work together to reduce GHG emissions across the city, while looking for opportunities to offset and plant more trees to capture carbon wherever possible.

Table Two: Wellington city emissions reduction targets by year

Year	City target
2020	10% reduction from 2001
2030	43% reduction from 2001
2040	68% reduction from 2001
2050	100% reduction from 2001

Action areas to become a net zero carbon city

Four key action areas have been identified to guide the first stage of the journey to become a net zero carbon city. These action areas will be underpinned by our climate action measurement framework and strong partnerships. The measurement framework is critical for modelling the emissions savings and co-benefits of Council's actions to keep us on track and accountable for our zero carbon goal. To make Wellington a zero carbon city requires commitment and innovation from our entire community and working in partnership with many stakeholders is critical.

Our four action areas are:

- **Transportation:** At 53% of the city's emissions, we need a rapid reduction in fossil fuel vehicles in favour of public transport, electric vehicles, shared mobility, cycling, walking and remote working. Aviation and marine account for almost 20% of this sector, but have limited immediately available solutions; therefore a move away fossil fuel road vehicles will need to be the biggest challenge of this decade.
- **Building energy and urban form:** With stationary energy responsible for 34% of city-wide emissions, we need both substantial gains in energy efficiency and a shift from gas and coal to renewable electricity. We also need to improve urban form to maximise compactness and make the city more about people and less about cars.
- **Advocacy:** A number of actions are beyond Council's decision-making responsibilities but play a critical role in reducing GHG emissions. We must use our relationships and position to argue for better regulatory and policy frameworks
- **The Council itself:** We must walk our talk and demonstrate leadership by reducing our own emissions - notably those from the landfills we own and the stationary energy we consume.

Climate action measurement framework

Why measurement matters

To achieve our ambitious targets we need to be able to act quickly with intent while having the ability to be agile and change c ourse if our actions are not resulting in the desired outcomes. Measurement is critical to our success because it enables us to:

- Know whether our actions are effective and resulting in GHG reductions.
- Recognise and maximise our efforts to create meaningful co-benefits for our city and its communities.
- Ensure our actions are promoting a just transition for vulnerable and low paid Wellingtonians.
- Generate new ideas for action by looking deeply at our data and finding new ways to reach our targets.
- Create a 'learning loop' that empowers and motivates others to take action on climate change - by showing them that their actions are creating measurable change.

What we are measuring

To keep us focused on our zero carbon goal, help us identify new opportunities, and ultimately hold us accountable for our work we will:

- Measure the carbon reduction potential of our committed and potential actions
- Identify the co-benefits of all our actions to ensure that in addition to protecting our climate our actions are positively impacting equity and wellbeing, resilience and natural capital, quality jobs and economic innovation, and ecosystem services and biodiversity.
- Assess the cost, and ease of implementing committed and proposed actions.

Linked to the measurement framework we are developing a performance dashboard that visually tracks, analyses and displays key metrics and data points. We will share the dashboard on the Council's website to help communicate our collective progress towards our zero carbon goal.

For more information, see *Appendix Two* for details of the framework criterion and method for evaluating our actions.

Partnerships

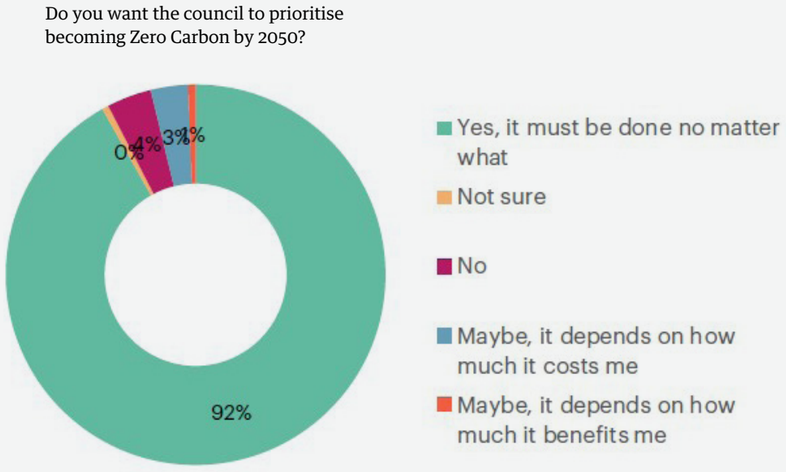
We can't do it on our own

Council recognises that becoming a net zero carbon city will only happen with the support of our entire community. Both systematic transformation by the public and private sectors and individual behaviour changes are needed to achieve zero emissions - one without the other will not get us the necessary scale of change at the necessary pace.

Community engagement

Community feedback has confirmed that there is strong support within the Wellington community for pursuing the goal of becoming a zero carbon city. When we asked our community for feedback in 2019 on whether Council should prioritise becoming zero carbon by 2050, 92% of respondents answered, "yes, it must be done no matter what." We have a dynamic, committed community; with business, community groups and individuals already achieving sustainability results. All Wellingtonians must be empowered to take action on climate change, as it is the actions of individuals that will collectively create long term GHG reductions. Council acknowledges it has a key role to play in helping to facilitate these behaviour changes.

Figure Six: Community feedback on zero carbon goal



The response is overwhelming - 92% of respondents answered "Yes, it must be done no matter what."

Te Atakura Steering Group

Council has established a Steering Group to contribute to the strategic directions of *Te Atakura's* delivery. Membership includes representatives from Wellington's educational institutions, iwi, business and community groups. Members bring a range of perspectives representative of the Wellington community including youth, health and wellbeing, communications, air travel and city connections, and business. The role of the steering group includes providing key stakeholder representation, promoting Te Atakura to stakeholders and acting as champions for Wellington's climate change response. Council will work with the Steering Group to develop strategies and actions for engaging our entire community in the challenge of becoming a zero carbon city. For more information on the Steering Group and its remit see page 44.

Regional collaboration

Council is actively collaborating with other councils within the Wellington Region and across New Zealand on climate change action. We are part of the Wellington Region Climate Change Working Group through which councils and mana whenua from across the Wellington region can network, discuss issues, share information and achieve (where appropriate) a consistent approach to climate change mitigation and adaptation.

National leadership

The Climate Change Response (Zero Carbon) Amendment Act 2019 (ZCA) provides a framework by which New Zealand can develop and implement clear and stable climate policies that contribute to the global effort under the Paris Agreement. The Act sets a new reduction target for New Zealand to reduce net emissions of all GHG emissions (except biogenic methane) to zero by 2050. The 2020 amendments to the Resource Management Act 1991 (RMA) align the RMA to the ZCA by requiring RMA decision-makers to consider the emissions reduction plans and national adaptation plans that must be published under the ZCA. These amendments to key legislative frameworks signify the Government's commitment to taking leadership on climate change issues; however, further significant policy and regulatory reforms are needed to achieve national and city GHG reduction targets. Council is committed to advocating to central Government for these changes - for more information on the priority advocacy initiatives refer to page 32.

Global partnerships

Council is a member of several international initiatives in which we are recognised globally as a city leading on climate action and transparency. In 2019 Council made the Carbon Disclosure Project A List[7] in recognition of our ambitious emissions reduction targets. We are also part of the 100 Resilient Cities Network and the Global Covenant of Mayors. We will continue to find ways to meaningfully contribute to global efforts to tackle climate change.

GHG reduction potential of our actions at a glance

Between 2001 and 2019 Wellington city's net emissions fell by 6%, from 1,051,486 tCO2e to 986,196 tCO2e. A further reduction in the city's annual net GHG emissions of 452,139 tCO2e is needed by 2030 to reach our 43% reduction target.

GHG reduction potential of measurable actions

This plan includes 28 committed and recommended actions with associated GHG reductions that can be measured. These actions are estimated to result in an 80,043 tCO2e reduction per annum, or a 14% reduction, in city-wide emissions from 2001 levels at 2030 (refer to *Appendix Three* for more details). Examples of the actions are summarised in *Table Three* below.

Table Three: Summary of actions areas and their GHG reduction potential at 2030

Action area	Examples of actions	GHG reduction potential per annum at 2030
Transportation	• Let's Get Wellington Moving • Shared mobility enhancements • Public places Electric Vehicles (EV) charger rollout	42,283 tCO2e 10% reduction in sector's emissions
Building energy & urban form	• Planning for Growth • Home Energy Saver Programme expansion • Business Energy Saver Pilot	15,116TCO2e 4% reduction in the sector's emissions
The Council itself	• Reducing the City's landfilled waste by one third by 2026 • Implementing the Energy Management Strategy & Action Plan • Converting the vehicle fleet to electric	22,644TCO2e 20% reduction in the Council's operational emissions

GHG reduction potential with central Government support

A high uptake of electric and fuel-efficient vehicles and an increase in amount of renewable electricity generation in the national grid have the potential to reduce city-wide emissions by a further estimated 116,612 tCO2e, or 10% by 2030. These reductions will only be possible if central Government contributes the necessary policies, regulations and funding; thus we must advocate to central Government for these changes.

Enabling actions

Further non-measurable actions have also been identified that will enable or accelerate GHG reductions across the city. These include:

- Advocating for the enhancement of the New Zealand building code to standardise energy efficiency, low carbon design, and decentralised energy creation.
- Investing in opportunities to regenerate native forests and plant more trees to sequester additional carbon.
- Investing in a Wellington Climate Lab, Sustainability and Climate Fund, and Future Living Skills programme.

More action is needed

Committing to all of our measurable actions and advocating to central Government for regulatory and policy changes for EVs and renewable electricity generation will not suffice. Further actions and investments are needed to reduce city-wide emissions by an additional 19% by 2030, as illustrated in *Figure Seven* below.

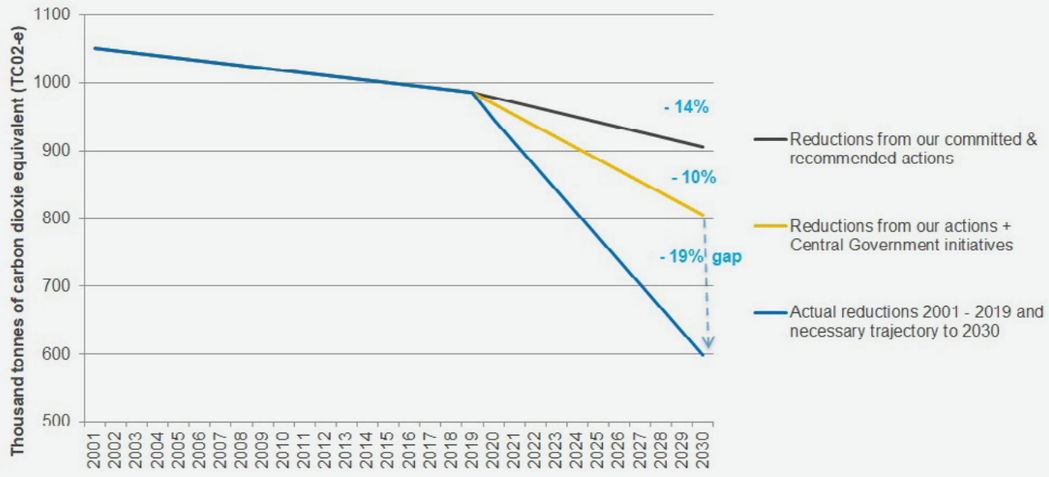
Council cannot achieve this reduction alone, and collaborating with central Government, partnering with iwi, and working with other local authorities and our entire community is critical.

We have begun identifying actions for further research and development that have major GHG rweduction potential. These include:

- Incentivising city-wide remote working - has the potential to reduce city-wide emissions by up to 4% per annum.
- Incentive programmes to promote energy efficiency upgrades in commercial and residential buildings.
- Incentivising the displacement of natural gas across the city - natural gas is currently responsible for 13% of the city's emissions.
- Accelerating opportunities to support carbon farming on private and public land, preferably with permanent native forests.

We must act quickly to engage with others, and work methodically to fully assess these potential actions against the climate action measurement framework criteria and develop a recommended pathway forward.

Figure Seven: Actual GHG reductions 2001-2019 and different pathways to 2030



Sector contribution to GHG reductions

Table Four summarises the actual and potential reductions in the most significant sectors by 2030. If all our measurable actions are successful and central Government introduces the necessary policies, funding, and regulations, it is plausible that the stationary energy and waste sector GHG emissions will achieve or exceed a 43% reduction by 2030. Given the constraints faced in the transport sector, further reductions will be needed in the other sectors - along with investing in carbon farming - to compensate for the transport sector emissions that cannot be readily reduced.

Table Four: Summary of actual and potential reductions in significant sectors

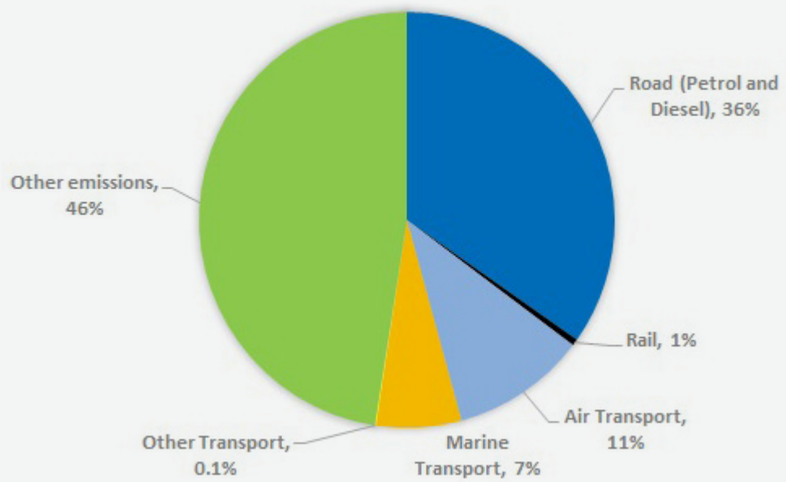
	Transport Emissions	**Stationary energy Emissions**	**Waste Emissions**	**Forestry Sequestration**
Actual pathway 2001-2019	4% increase in sector emissions	23% reduction	32% reduction	11% reduction
Measurable actions 2020-2030	10% reduction in sector emissions	4% reduction in sector emissions	33% reduction in sector emissions	TBC - More R&D is needed
Central Government initiatives 2020-2030	8% reduction in sector emissions Relies on strong government EV policies	16% reduction in sector emissions Relies on renewables in the national grid to increase from 83% to 93%	Not assessed Increases in waste disposal levy and product stewardship requirements would enable further GHG reductions	Not assessed Under BAU it is likely that more exotic forestry will be harvested which would reduce GHG sequestration
% of City emissions	**53%**	**34%**	**6%**	**N/A**
City 2030 Goal	**43% reduction**	**43% reduction**	**43% reduction**	**N/A**
Gap in 2030	**29%**	**0%**	**-22%**	**N/A**
Comments	For context the 29% gap is equivalent to an additional 77,139 petrol cars going electric or everyone in the City who can working remotely 100% of the time.	Further reductions will be needed to compensate for transport sector emissions that cannot readily reduce & emissions from minor sectors.	Potential reductions are heavily reliant on a viable sewage sludge solution being adopted and the 33% reduction in landfilled waste being achieved.	Investing now in efforts to increase carbon farming is essential to offset future harvesting and emissions from activities that cannot readily be reduced.

Action area: Transportation

Progress so far:

- 6% decrease in road transport emissions between 2001 and 2019.
- 30 kilometres of cycle way built.
- 90 car share vehicles in the city and 5,970 average users a month as at March 2020.
- 9 fast and 14 residential electric vehicle chargers installed in the city as at June 2020.
- 1,437 electric vehicles in the city as at May 2020.

Figure Eight: Total city-wide emissions breakdown by source - highlighting transport emissions



Opportunities

Road transport is the highest emitting activity in the city - contributing 36% of the city's emissions. The actions identified in this plan are focused on reducing:

- Vehicle kilometres travelled (VKT) - by providing viable attractive alternatives to private vehicle travel; and/or
- Reducing emissions per VKT - through supporting the transition to a zero emissions transport fleet.

Air and marine transport contribute 11% and 7% of the city's emissions, and emissions have increased 45% and 4% respectively in these sectors since 2001. Although no actions have yet been identified and aviation emissions will remain low in the short-term due to the Covid-19 pandemic, strong investment in potential solutions is needed in the future.

Committed and recommended actions

Investing in rapid transit and improving public and active transport infrastructure

Major GHG reduction potential at 2030

The infrastructure that Let's Get Wellington Moving (LGWM) will put in place through its programmes represents a generational improvement in public and active transport. The LGWM indicative package was endorsed by Government in 2019 and includes: a walkable central city, safe connected cycleways, a smarter transport network, and public transport improvements such as mass transit between the central city and the airport.

LGWM is a joint initiative between the Government, Wellington City Council, Greater Wellington Regional Council and the New Zealand Transport agency.

Co-benefits of LGWM include better travel choices and improved travel times and public transport reliability, fewer fatal and serious injury crashes for pedestrians and cyclists, improved amenity in the CBD and more secure access between communities and key regional facilities (hospital, airport and port).

Travel behaviour change

Enabling GHG reduction potential at 2030

By helping people make the best travel choices for their commutes, we can support the switch to low emission and healthier transport modes such as walking and cycling. Council uses a variety of methods to encourage the safe and sustainable use of our transport network. We work with stakeholders, advocates and our wider community to ensure good outcomes through events, service provision, social marketing campaigns, and providing advice and information. Two initiatives Council actively supports are Bikes in Schools and Movin March.

Shared mobility options

Moderate GHG reduction potential at 2030

Wellington is well suited for car, electric scooter and bike sharing given the relatively high population density in the central city. Enhancing shared mobility options has the potential to reduce carbon emissions substantively through the removal of private cars from the network. Research shows that each car share vehicle can take 10 or more cars off the road and encourages a behavioural shift toward active and public transport options[8]. The removal of private cars reduces both VKT and also reduces emissions per VKT as car share vehicles in Wellington are either electric, hybrid or have high fuel efficiency in comparison to the vehicles they are replacing.

Existing car and micro mobility schemes in Wellington have highlighted the following co-benefits to date: more flexibility in transport options, easier and faster to get around, financial savings from selling private vehicles due to reduction in car ownership costs.

Investing in electric vehicle charging infrastructure

Moderate GHG reduction potential at 2030

Wellington city has one of the highest electric vehicle (EV) ownership rates in New Zealand, and the number of EVs in the city is forecast to grow from 1,300 to over 7,500 in 2024.[9] This growth will overwhelm the current chargers in the city. International research and local evidence shows that almost all EV owners use a public charger at least once a month, usually to enable longer distance travel. In Wellington, residents of over 20,000 households cannot park their car on the property, meaning they would be reliant on public charging facilities. Council therefore has a role in seeing the charging station network develop. A business case seeks formal approval to fund the installation of around 60 EV fast chargers in public locations around the city by 2025. This initiative is designed to complement the existing residential street chargers and chargers installed by the private sector.

Co-benefits of installing EV chargers include improving access to clean transportation options, improving resilience of transportation by geographically spreading the chargers, and reducing noise and air pollution from fossil fuel-based vehicles.

Other priority actions requiring further investigation

As highlighted earlier in this plan, committed and recommended transport actions are forecast to reduce the transport sector's emissions by 5% by 2030, and more action is needed to meet our 2030 reduction target. Other actions identified as worthy of thorough investigation over the next 18 months include:

Accelerating the electrification of the city fleet

Major GHG reduction potential at 2030

Transitioning to a zero-emissions transport fleet presents a major opportunity to reduce the city's GHG emissions. Given New Zealand's renewable energy assets, a priority is electrifying the fleet. Using the Ministry of Transport's high EV uptake scenario modelling[10] it is estimated that increasing EV ownership could reduce Wellington's on road transportation emissions by over 17% by 2030. The high EV uptake scenario will only occur if central Government rapidly introduces fuel economy legislation and policies that reduce the price to incentivise the purchase of EVs, and signals a 2030 fossil fuel vehicle importation ban. Council has a key role to play in advocating for these legislative and policy changes. Internationally, the countries with much higher per-capita sales figures of EVs all share the characteristic of having strong and supportive central government policies in place. Given diesel fuel emissions are one of the fastest growing emissions sources in our city, we also need government policies that help our trucks and buses, and not just cars, to go electric.

Council must also investigate other ways to support the uptake of EVs in the city, for example road congestion and pollution charges (which could favour electric vehicles this decade), and looking at new developments to ensure they are taking EVs into account where vehicles are present. Auckland, together with several international cities, is looking to declare part of their CBD streets as 'fossil fuel free' by 2030; something that Wellington could emulate in our city centre streets.

Incentivising city-wide flexible working

Major GHG reduction potential at 2030

The Covid-19 pandemic forced all New Zealanders, who had the capacity, to work remotely from home. Technology made remote working possible, efficient and effective for many people. Subsequently, for each month of the level 4 lockdown period New Zealand's annual carbon emissions are estimated to have fallen by 2%[11] - primarily due to the significant reduction in road transport and domestic aviation. Incentivising the city's applicable workforce to work from home one to two days a week has the potential to reduce road transport emissions by 4-12% per annum. It also provides the co-benefit of reducing peak daily road congestion, which is very helpful to offset the travel needs of a rapidly growing population. Working from home also has the potential to support local businesses in and around suburban centres. Council can educate the city and promote the idea of working from home, and act as a leader by having its own workforce more frequently do the same.

Identifying aviation and marine emission opportunities

Major GHG reduction potential

At almost 20% of the city's emissions, and with emissions from these sectors still increasing, actions to reduce emissions from aviation and marine sectors must be explored and identified in collaboration with key stakeholders. Although aviation emissions will remain low in the short-term due to the Covid-19 pandemic, strong investment in potential solutions is needed.

An electric harbour commuter ferry and corresponding high power electric-ship charging station is under construction in Wellington, so we will soon have a local showcase and relevant industry skills.

Transport actions key indicators of success

The following key indicators of success have been identified to help measure the effectiveness and overall success of our transport actions. These indicators can also help to estimate the GHG emissions reductions of our actions in the absence of actual emissions data.

1. Reduced emissions per vehicle kilometre travelled
2. Reduced private vehicle kilometres travelled per capita
3. Reduced car ownership rates per household
4. Increase in public transport usage for journey to work trips
5. Decrease in journey times for public transport
6. Increase in walking and cycling for journey to work trips
7. Change in proportion of residents using active modes or public transport as measured by the annual cordon survey or Census data.
8. Increase in kilometres of connected cycle ways
9. Increase in number of registered and active car share service members
10. Increase in the number of publicly accessible electric vehicle charging stations
11. Increase in the % of EVs in the city fleet
12. Increase in the number of people working remotely

Table Five: City-wide transport actions assessment against measurement framework criteria

Action	Project	Key success indicators	GHG reduction	Lead	WCC Investment	Investment by others	Co-benefits				Ease of implementing	Status
							Equity & wellbeing	Resilience	Economy	Environment		
Investing in rapid transit and improving public and active transport	LGWM Indicative package	1-7		WCC, GWRC, NZTA, Central government	$$$$	$$$$	+++	++	+++	++	C	Underway
	Travel behaviour change	1, 2, 4, 6		WCC	$$	$$	++	++	+	++	E	Underway
Shared mobility	Car Sharing	1, 2, 3, 8		Business sector	$$	Not assessed	++	+	+	+	E	Underway
	e- scooter sharing	1, 2, 3			$	Not assessed	+	+	+	+	E	Underway
Supporting the Electrification of the fleet	Public Places EV charger rollout	1, 9, 10		WCC	$$	$	+	+		+	M	Business case awaiting approval
	Clifton park charging hub	1, 9, 10		WCC	$	$		+		+	E	Business case awaiting approval
	Other actions eg Congestion charging or 'fossil fuel free' streets	TBC		WCC, GWRC, NZTA, Central government	Not assessed	Not assessed	Not assessed	Not assessed	Not assessed	Not assessed	Not assessed	Further R&D required
Incentivising City-wide flexible working	TBD	1, 2, 11		WCC	Not assessed	Not assessed	++	++	+	++	Not assessed	Further R&D required

Key - refer to Appendix One for more details

GHG Reduction potential at 2030	Investment 2020-2030	Co-benefits	Ease of implementing
Major GHG reduction potential	**$$$$** >$10 million	+++ Major potential benefit	**C** Complex
Moderate GHG reduction potential	**$$$** $10 million - $5 million	++ Moderate potential benefit	**M** Moderate
Minor GHG reduction potential	**$$** $5 million - $1 million	+ Minor potential benefit	**E** Easy
Enabling GHG reduction	**$** <$1 million		

Action area: Building energy and urban form

Progress so far:

- A 23% reduction in city-wide stationary energy emissions since 2001.
- 5% of Wellington homes visited by Home Energy Saver Auditor and over $6.2 million invested in energy saving initiatives since 2011.
- 1387 houses insulated via the Warmer Kiwi Homes grant since 2010.
- 19 commercial buildings have achieved top rated Green Star design certifications (5 & 6 stars) for new builds, retrofits, or office fit outs since 2007.

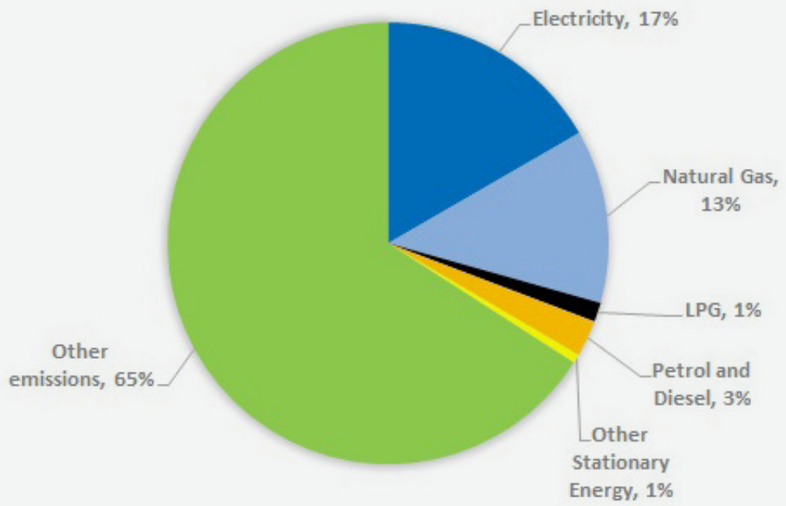
Opportunities

Electricity consumption is the second highest emitting activity in the city - contributing 51% of the stationary energy sector's and 17% of the city's emissions. The use of fossil fuels to generate electricity in New Zealand has decreased since 2010 and has been replaced by renewable sources, which currently account for 85% of electricity generation. Renewable electricity generation is forecast to grow to 93% by 2030[12] which will further decrease electricity related emissions. With the move toward more renewables in the electricity grid the need to displace natural gas will become increasingly important.

The actions identified in this plan are focused on:

- Supporting and encouraging energy efficiency improvements, and the uptake of energy efficient technologies to reduce demand and improve resilience
- Improving urban form to maximise compactness, reduce reliance on the private car and support a low carbon, resilient city and its growing population.

Figure Nine: Total city-wide emissions breakdown by source - highlighting stationary energy emissions by energy type



Committed and recommended actions

Planning for Growth

Enabling GHG reduction potential at 2030

Wellington will become home to an additional 50,000 to 80,000 people over the next 30 years. An estimated 28,000 to 45,000 new dwellings will need to be built to house our growing population. The Planning for Growth (PFG) programme of work includes the development of a new Spatial Plan (to replace the Urban Growth Plan) and a full review of the district plan. PFG represents a once in a lifetime opportunity to direct growth to the right places and set our planning rules to create a more compact city which is more about people and less about cars.

The Spatial Plan will provide the blueprint for where and how the city should grow and develop by considering a range of topics including land use, transport, three waters infrastructure, natural hazards and natural environment values. The draft spatial plan contains proposals for intensifying housing in the central city and suburbs and includes proposed changes to special character areas to enable more housing to be built in areas where public transport, walking and cycling are attractive options for commuting and everyday travel. The Spatial Plan will ultimately provide the direction for the District Plan review.

The District Plan review presents an opportunity to ensure the 'rulebook' for land development in the city supports lower carbon, higher amenity and more compact urban form, including height limits for buildings, site coverage, high performance buildings and parking requirements.

The Green Network Plan, the City Laneways and Golden Mile plans will also enable GHG emissions reductions in the City, alongside increasing greenspace, connectivity and resilience, supporting biodiversity and creating a more walkable city.

Supporting home energy efficiency

Minor GHG reduction potential at 2030

Energy consumed by Wellington households is responsible for 7% of the city's emissions. The majority of our existing housing stock is old and low density, making them relatively inefficient, poorly insulated and expensive to heat. Furthermore, around 40% of our homes are damp and mouldy. Inefficient homes and buildings have a large financial and health impact on Wellingtonians. Promoting warm, dry homes through expanding the Home Energy Saver Programme and promoting the Warmer Kiwi Homes scheme ensures that Wellingtonians, especially our most vulnerable populations, have comfortable, healthy homes to live in.

Increasing neighbourhood resilience

Minor GHG reduction potential at 2030

Resilience is a key aspect to living in Wellington. There has been an increasing focus on supporting communities to be able to respond and adapt to climate-related events and natural hazards. The Neighbourhood Grids trial has outfitted 24 homes in areas of vulnerable substations with a resilience package. The package includes solar and battery systems to face power outages, and an additional power base for neighbours to charge phones and connect with others in emergency situations. Decentralised energy production by buildings will become increasingly important as more energy consumption is driven toward low-carbon electricity use, and additional strain is put on the existing grid during peak times.

Business Energy Saver programme

Moderate GHG reduction potential at 2030

Energy consumed by Wellington's commercial and industrial businesses is responsible for 24% of the City's emissions. A business case seeks formal approval to provide Wellington landlords and businesses with free and trusted advice via an energy audit and personalised action plan, and connections with solutions providers. This proposal offers a cost effective solution to reduce operational energy costs, energy use, and carbon emissions.

50% reduction off development contributions

Minor GHG reduction potential at 2030

To encourage sustainable growth and good use of infrastructure, Council offers a 50% reduction off development contributions to commercial and some mixed use developments that meet certain Green Building Standards. There has been low uptake of this incentive since it was put in place, and a review of this incentive alongside other potential incentive programmes to promote energy efficiency upgrades is needed - see 'other actions to investigate' below for more details.

Other actions to investigate

As noted earlier, more action is needed to meet our 2030 reduction target. Other building energy actions identified as worthy of thorough investigation over the next 18 months include:

Incentive programmes to promote energy efficiency upgrades

Moderate reduction potential at 2030

Including review of a targeted rates scheme*, and/or grants to assist with home/building upgrades, including:

- Renewable energy generation
- Energy storage
- Solar hot water and Hot water heat pumps
- Double glazing
- Replacement of gas heating to electric
- Heat recovery and ventilation systems
- Building performance certificates

*Note: GWRC's targeted rates scheme currently focuses on insulation and heating.

Support building sustainability improvements

Enabling GHG reduction potential

Including:

- Reviewing opportunities through the District Plan and Council processes to support sustainable building such as:
  - Passive design
  - Low carbon/energy efficient design and construction
  - Water, wastewater and storm water management
  - Large scale renewable energy
  - North-facing roofs that make addition of solar panels effective and less expensive
  - EV chargers in homes, especially apartments, where such provision is complicated when done retrospectively.
- Investigate barriers to the uptake of sustainable design and construction, including council processes
- Provide education and upskilling to regulatory staff on sustainable design
- Supplying energy efficiently, in particular by encouraging decentralised energy generation and embedded networks

Building Performance Certificates for residential and commercial buildings

Enabling GHG reduction potential

Building Performance Certificate (BPC) use in Europe and North America has been shown to encourage the improvement of existing building performance, as well as incentivise high performing new builds. Wellington City Council is one of a number of Councils across New Zealand considering the inclusion of BPCs onto Land Information Memorandum (LIM) reports for residential homes. Review is also needed regarding BPC uptake for Commercial buildings, including NABERSNZ ratings for office buildings.

Natural gas displacement

Moderate reduction potential at 2030

Natural gas is responsible for 13% of the City's emissions. With increasing renewables in the grid continuing to reduce the carbon footprint of electricity generation, the need to displace gas-based heating will become increasingly important. Households use around 8% of city's natural gas, with commercial and industrial businesses consuming 92%. Examination of incentive options is needed to promote the shift from natural gas to electricity.

Building energy and urban form key indicators of success

The following key indicators of success have been identified to help measure the effectiveness and overall success of our building energy and urban form actions. These indicators can also help to estimate the GHG emissions reductions of our actions in the absence of actual emissions data.

Building Energy

1. Reduction in kWh of electricity consumption for the city
2. Percentage of Wellington homes audited by Home Energy Saver
3. Percent of eligible 'Warmer Kiwi Homes' households who receive insulation grant
4. Percentage of households who invest in low energy and carbon practices
5. Percentage of businesses who invest in low energy and carbon practices
6. Percentage of new and retrofitted commercial buildings that achieve a minimum Green Star 5 or equivalent
7. Percentage of energy derived from community renewable energy generation across the city

Urban Form

1. Percentage of new dwellings built in the CBD, special character areas, and in and around suburban centres
2. Increase in the percentage of the population living in the CBD, special character areas, and in and around suburban centres.
3. Reduced emissions per vehicle kilometre
4. Reduced private vehicle kilometres travelled per capita
5. Reduced car ownership rates per household
6. Increase in public transport usage for journey to work trips
7. Decrease in journey times for public transport
8. Increase in walking and cycling for journey to work trips

Table Six: City-wide building energy and urban form actions assessment against measurement framework criteria

Action	Project	Key indicators of success	GHG reduction	Lead	WCC Investment	Investment by others	Co-benefits				Ease of implementing	Status
							Equity & wellbeing	Resilience	Economy & jobs	Environment		
Planning for Growth	Spatial Plan	8-15		WCC	$$$$	Not assessed	+++	+++	+++	+++	C	Underway
	Special character areas											
	District Plan review											
	Green Network Plan & Water Sensitive Urban Design											
	City Laneways & Golden Mile project plans											
Supporting home energy efficiency	Home Energy Saver Expansion	1, 2, 4		WCC - delivered by Sustainability Trust	$$$	$$$	+++	+	+++	++	E	Underway business case for expansion awaiting approval
	Warmer Kiwi Homes	1, 3		EECA	$	$$	+++	+	+++	+	E	Underway
Increasing neighbourhood resilience	Neighbourhood grids	1, 4, 7		Contact Energy	$	$	+	+++	+	+	E	Trial underway
Supporting business energy efficiency	Business Energy Saver pilot	1, 5		WCC with delivery partner	$$	Not assessed	+	+	++	+	M	Business case awaiting approval
Incentive programmes to promote energy efficiency upgrades	50% reduction off development contributions	1, 6		WCC	$$	Not assessed	+	+	+	+	E	Underway
	Other incentives	TBD	TBD	WCC	TBD	TBD	TBD	TBD	TBD	TBD	TBD	Further R&D required
Utilisation of regulatory levers to encourage energy efficiency uptake	Support building sustainability improvements	TBD		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	Further R&D required
	Building Performance Certificates for residential and commercial buildings	1, 4, 5		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	Further R&D required

Key - refer to Appendix One for more details

GHG Reduction potential at 2030		Investment 2020-2030		Co-benefits		Ease of implementing	
	Major GHG reduction potential	**$$$$**	>$10 million	+++	Major potential benefit	**C**	Complex
	Moderate GHG reduction potential	**$$$**	$10 million - $5 million	++	Moderate potential benefit	**M**	Moderate
	Minor GHG reduction potential	**$$**	$5 million - $1 million	+	Minor potential benefit	**E**	Easy
	Enabling GHG reduction	**$**	<$1 million				

Action area: Advocacy

Actions were identified through the Te Atakura Blueprint that Council does not have decision making responsibilities for but play a key role in transitioning to a zero carbon future. The priority initiatives Council will advocate for are listed in *Table Seven* below. We believe these actions have high potential to enable or accelerate GHG reductions and help us achieve our climate goals. For more information on identified advocacy initiatives refer to the *Te Atakura Blueprint*

Table Seven: Advocacy initiatives with high GHG reduction enabling or accelerating potential

Transportation
EV subsidies from central Government
Fuel economy import standards
Proposed 2030 fossil vehicle importation ban
Supporting sustained public and active transport investment
Commercial scale production of biofuels
Building Energy and Urban Form
Enhancement of the New Zealand building code to standardise energy efficiency and low carbon design, including progressive updates to ensure all new buildings are net zero carbon by 2030
Sustained investment in renewable energy and decentralised energy creation
Reducing reliance on and use of natural gas
Building performance certificates at residential point of sale
NABERSNZ rating requirements for all commercial office buildings of 1,000sqm or more
Waste
Promotion of waste reduction and reuse across the building sector
Nation-wide increases in the waste disposal levy
Product stewardship requirements around packaging and low quality plastic use
Other
All of government shift to sustainable procurement policies

Other key city-wide initiatives

The following recommended actions will enable GHG reductions within Wellington city and help move us closer to our 43% reduction by 2030 target.

Accelerating opportunities to support carbon farming

Enabling GHG reduction potential

Native forest restoration and planting more trees will play a significant role in helping us meet our ambitious targets to be net carbon zero before 2050. Investing now in efforts to increase carbon sinks, preferably with permanent native forests, on private and public land is essential to offset future harvesting and emissions from activities that cannot readily be reduced. There is significant opportunity to partner to increase native forest restoration and planting of native forest, which would accelerate native forest establishment and associated carbon sequestration. This is tagged as an area where more cross-council policy work and R&D is required.

Wellington Climate Lab

Enabling GHG reduction potential

An evolving initiative focused on supporting the Wellington business community to drive innovation and accelerate climate-positive impact. This initiative will provide the support-structure for Wellington to become a global leader in climate change mitigation, and for the business community to embrace the emerging employment opportunities of a sustainable economy.

Zero Carbon Challenge and Climathon

Enabling GHG reduction potential

Council has supported both the Low Carbon Challenge and the Climathon for over six years. As founder and core funder of the Low Carbon Challenge, we have lifted idea stage businesses up to exciting opportunities year after year. As a co-host of the annual Climathon with Victoria University of Wellington, we have presented a fixed opportunity for the community to come together once a year and apply their minds to zero carbon problems.

Climate and sustainability fund pilot

Enabling GHG reduction potential

This new fund would provide support to community projects that reduce carbon emissions in Wellington. Feedback received on Te Atakura shows that Wellington residents are eager to take action and create change on the ground. This fund is a way to harness that energy and support climate mitigation efforts at the neighbourhood, community and business levels.

Future Living Skills programme

Enabling GHG reduction potential

The Future Living Skills programme is a mature set of collectively-developed behaviour change resources to help groups of residents make smart, affordable, and lower-carbon consumer choices. The programme would strongly compliment current carbon and waste reduction efforts in Wellington, help harness the growing demand by residents to take individual action on climate change, and provide a range of social co-benefits.

WCC Sustainable Food Plan

Enabling GHG reduction potential

Globally, the food system contributes an estimated 25-30% of all GHG emissions. The purpose of the Sustainable food plan is to coordinate sustainable food system efforts across Council and ensure that food system considerations are bought into Council's decision-making process. The plan's vision is to ensure Wellington has a thriving network of local food producers, cafes, farmers markets, community gardens and restaurants. This vibrant local food network supports a city where all residents have access to good food that is grown in a way that respects people and the planet.

Table Eight: Other City-wide actions assessment against measurement framework criteria

Project	GHG reduction	Lead	WCC Investment	Investment by others	Co-benefits				Ease of implementing	Status
					Equity & wellbeing	Resilience	Economy & jobs	Environment		
Accelerating opportunities to support carbon farming		WCC + others	Not assessed	Not assessed	+++	+++	++	+++	M - C	More R& D required
Wellington Climate lab		TBD	$	Not assessed	++	++	++	++	E	Business case awaiting approval
Zero Carbon Challenge & Climathon		TBD	$	Not assessed	++	++	++	++	E	Business case awaiting approval
Climate and sustainability fund trial		WCC	$$	Not assessed	+	++	++	++	E	Business case awaiting approval
Future Living Skills programme		WCC	$	Not assessed	++	++	++	++	E	Business case awaiting approval
Sustainable Food Plan		WCC	$	Not assessed	++	++	++	++	M	Draft plan under development

Key - refer to Appendix One for more details

GHG Reduction potential at 2030	Investment 2020-2030	Co-benefits	Ease of implementing
Major GHG reduction potential	**$$$$** >$10 million	+++ Major potential benefit	**C** Complex
Moderate GHG reduction potential	**$$$** $10 million - $5 million	++ Moderate potential benefit	**M** Moderate
Minor GHG reduction potential	**$$** $5 million - $1 million	+ Minor potential benefit	**E** Easy
Enabling GHG reduction	**$** <$1 million		

Action area: The Council itself

Wellington City Council's emissions profile

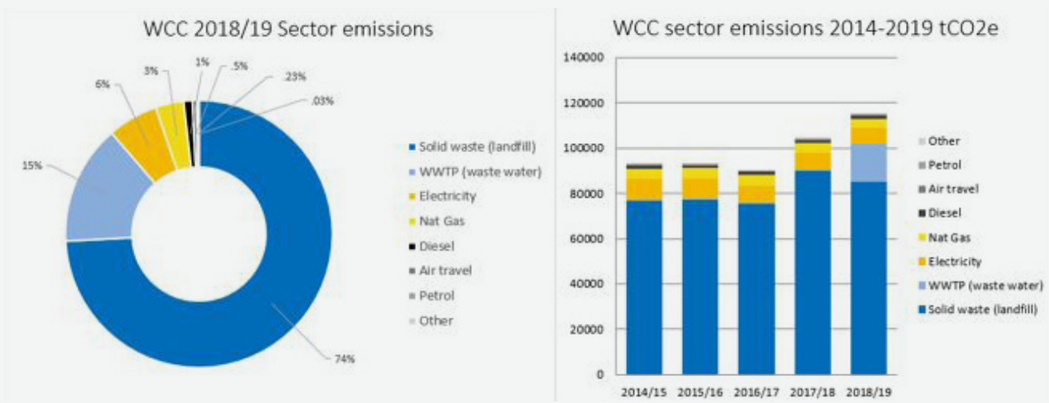
Since 2014, Council has used the *Carbonreduce* scheme (formerly CEMARS)) through Toitu Envirocare to report Council-related emissions. *Carbonreduce* is an internationally-accredited programme, and achieving certification gives us confidence that the data we collect is an exact measure of how we are performing as an organisation in reducing our greenhouse gas emissions

In 2018/19 the GHG emissions for Council were 115,000 tCO2e.

- Solid waste and wastewater treatment were the highest emitting areas for Council, producing 101,908 tCO2e or 88.6% of the Council's gross emissions. Interestingly, while emissions from solid waste actually reduced by over 4,000 tCO2e compared to the previous year, wastewater treatment emissions rose dramatically, much of which can be attributed to more accurate emissions measurement methodology.
- Stationary energy is the Council's second highest emitting area, producing 9.5% of the Council's emissions. Almost 65% of these emissions are from electricity consumption, with the remainder coming from natural gas.

Since utilisation of the Toitu software began in the 2014, there has been a noticeable increase of emissions due to improved methodologies for measuring several emissions sources, chiefly wastewater. We are currently in the process of analysing prior years with the updated methods to get a sense of how far we've come on our carbon reduction journey.

Figure Ten: Council's GHG emissions profile, and pathway 2014-18



Wellington City Council Target

Council has set a target to reduce our own emissions to net zero by 2050. To achieve net zero emissions we must address our two largest contributors: waste and stationary energy.

Achievements so far:

- Worked with volunteers to plant over 1.7 million trees since the 1990s.
- 1,300 hectares of forestry protected in carbon covenants on Council-owned land.
- Achieved *Carbonreduce* certification since 2015.
- 12 of our 174 vehicles in the Council fleet are now electric.
- Building Green Star 5 Convention Centre.
- Energy efficiency measures for Council buildings and facilities have resulted in yearly savings of over $950,000 per year and the equivalent energy to power over 500 homes.
- Replacement of 15,000 streetlights to LED, saving 2,611,540 kWh per year, or enough power to charge 65,288 Nissan Leafs.
- Commitment to fund sewage sludge processing at the Southern Landfill.

Committed and recommended actions

Climate measurement and management

Enabling GHG Reduction

Our climate change commitments require ongoing measurement of our city and Council-controlled GHG emissions. Without investment in measurement and management we cannot maintain certification and compliance with the Global Covenant of Mayors and *Carbonreduce*, or track our GHG reduction progress and identify future actions. Furthermore, we are legally obligated to undertake Field Measurement Approach (FMA) assessments of our forests or risk losing valuable assets in the form of carbon credits.

Waste actions:

Sewage Sludge Processing Solution

Reduction potential TBC

Council's immediate priority is to fund a viable sewage sludge processing solution for the city. A decision on the most viable option is expected in September 2020. Until this solution is in place we are restricted to how much waste we can reduce from landfill because we would breach our sewage sludge disposal resource consent which requires every tonne of sludge to be mixed with four parts of rubbish.

Reduce landfilled waste by a third by 2026

Major reduction potential

Through the Regional Waste Management and Minimisation Plan, Council has set a goal to reduce waste at the Southern landfill by a third by 2026, and has an aspiration to be a waste free region in conjunction with other councils. Council has a lot of ongoing initiatives focused on:

- Educating and supporting schools, community groups, businesses and residents to minimise waste. This includes the Community Education and engagement programme that reaches approximately 2,500 individuals at 90 events per annum.
- Implementing optimised kerbside systems that maximise diversion and are cost effective for households.

- Working towards best practice in landfill management, including close landfills and landfill gas capture.
- For more information refer to the Wellington Regional Waste Management and Minimisation Plan.

Council's Waste Operations team has several key areas in waste where we are looking to make substantial improvements. These include:

- Investigating options for household food waste. Including an organic waste diversion trial in Miramar - which includes a kerbside collection and a number of enhance home composting options.
- Work on a business case for the transition of the landfill to a Resource Recovery Park is also underway, including identifying immediate opportunities to increase revenue at the top shop through further resource recovery and marketing opportunities.

Building Energy actions:

Council has a real opportunity to influence real industry and market change by becoming a leader in high performing buildings. In addition to reducing the Council's own emissions many of these actions play a key role in enabling city-wide emissions reductions.

Energy Management Strategy and Action Plan

Enabling GHG reduction/Reduction potential TBC

Council has adopted an Energy Management Strategy for its stationary energy use (electricity and natural gas), with the vision to be a leading example of energy management and sustainability in Wellington. The strategy's purpose is to create a structured plan to meet our sustainability requirements, build the Council's resilience from the changing energy market, and reduce the operational expenditure of stationary energy. The key actions identified in the plan are:

- Create a structured plan to reduce GHG emissions to meet the requirements of being net carbon zero before 2050
- Invest in energy efficiency programmes to reduce operational expenses
- Invest in smarter energy management systems for better visibility and control of energy consumption
- Staff behaviour change programme

NABERSNZ for WCC Buildings (Energy Ratings)

Minor reduction potential/enabling

Without the current ability to mandate building performance ratings at a city level, Council must lead by example. Using a tool like NABERSNZ to rate energy performance in Council office buildings will allow us to measure, improve, and monitor energy use. It is also likely that the increased visibility of this tool will provide an opportunity to educate owners and tenants of the value in examining the energy performance of office buildings. There is almost 1.4 million m2 of office space in Wellington; Council has the ability to promote the examination and reduction of building energy use both internally and across the city.

Green Star & Home Star for WCC Buildings

Reduction potential TBC

To achieve our zero carbon goals we must begin building and retrofitting to a higher energy efficiency standard as soon as possible. Making a commitment to certify all new commercial building projects over $5M to a 5-star Green Star rating (or third-party equivalent e.g. Living Building Challenge) and new Community Housing to 6 Homestar (or equivalent) from 2021, as part of a broader Sustainable Asset Policy would ensure all new builds will operate at net zero carbon from 2030 and existing buildings are net carbon zero by 2050.

Displacing natural gas as a fuel source

Minor reduction potential/enabling

Council owns and maintains a wide range of facilities, 35 of which currently utilise natural gas in order to provide services to the community. Together these facilities are emitting around 3,645 tCO2e per annum and contributing around 3% of Council's operational footprint. With increasing renewables in the grid reducing the carbon footprint of electricity generation, the move away from natural gas will become increasingly critical in reducing GHG emissions. It is also fiscally responsible and ensures stable access to energy in the long term given the oil and gas exploration ban.

Solar community facilities

Minor reduction potential/enabling

Installing Solar PV assets would assist Council in reducing its GHG emissions. Solar PV generation also has the potential to deliver commercially attractive returns, reduce energy bills, and enhance the resilience of the existing council facilities. It aligns with other plans to install EV chargers at some of these facilities, and to operate our EV fleet from increasingly renewable power.

Water Management Actions:

Water meters

Enabling reduction potential

Council's water system is the largest source of electricity emissions. To improve our systems we first need to better understand them, and the best way to accomplish this is through water meters. Work has been commissioned by GWRC to assess options for water meters across the region.

Transport Actions:

EV first fleet

Minor reduction potential

Alongside identifying opportunities to reduce the size of the Council's vehicle fleet, a December 2030 timeframe has been proposed to replace all Council owned fossil fuel driven cars, SUVs, vans and utes with zero emission electric replacements. Electrifying the fleet has the potential to reduce our corporate transport carbon emissions by approximately 220 tCO2e per year when complete, and to reduce our fuel bill for these vehicles by about 80%. It also demonstrates leadership around decarbonisation.

Flexible working

Minor reduction potential/enabling

Council has learned a lot about the merits and disadvantages of working from home during the Covid-19 pandemic. As we return to our new normal Council is keen to retain the merits, and avoid or manage the disadvantages. This requires flexibility and a level of maturity, and a sound employment relationship with our staff. Council is thinking about this from a policy perspective. In the meantime, we have agreed that we will retain a flexible approach to working from home.

Carbon Farming Actions

Enabling via sequestration

Council currently has 1453 hectares of regenerating native forest registered as Permanent Forest Sink Initiative covenants, which are generating around 8,000 carbon credits annually due to pest control, planting and fencing - this allows these areas to return to native forest faster. A recent assessment of carbon sequestration on Council land has revealed that an estimated 100 additional hectares of naturally regenerating and planted native forest could be added. In addition, the Council's native plant nursery in Berhampore provides 100,000 trees a year for community, partner and council planting initiatives.

Actions for further investigation

Procurement

Enabling and accelerating GHG Reduction

Emissions from contractors are largely unknown. Opportunities exist to include carbon emissions output criteria and guidelines in the Council's procurement policy and influence local and national supply chains to improve their sustainability and climate reduction performance.

Improving Governance

Enabling and accelerating GHG Reduction

Council currently assesses every Council paper, investment, policy and proposal for its relationship and impacts on climate change - but the assessment currently does not involve in-depth analysis of climate change mitigation and adaptation impacts of/on the project. Re-evaluating how the Council takes account of climate change in each Council paper to ensure robustness and enhanced consideration for key issues will empower officers across the business to better support Councillors.

Staff education and engagement

Enabling and accelerating GHG

Increasing staff engagement will help increase our chances of reducing carbon emissions and meeting our zero carbon by 2050 target. With increased staff engagement, we can:

- Ensure Council is acting on its commitment to put the protection of our environment and climate change at the front and centre of decision-making - if people are actively engaged there is a higher chance they will carry out their daily jobs with a zero carbon lens and consider sustainability in everything they do.
- Reduce corporate carbon emissions and operational costs - through staff adopting more sustainable behaviours that reduce energy and waste. The behaviours of individual staff collectively have big impact.
- Help Council demonstrate leadership in sustainability and influence/motivate others to engage in low carbon behaviours.

Key indicators of success for the Council

The following key indicators of success have been identified to help measure the effectiveness and overall success of Council's operational actions. These indicators can also help to estimate the GHG emissions reductions of our actions in the absence of actual emissions data.

1. Viable sewage sludge processing solution in place
2. Reduction in landfill waste by a third by 2026
3. Reduction in operational energy consumption in Council owned buildings
4. Percentage of council owned buildings with natural gas converted to electricity
5. Percentage of new and retrofitted Council buildings that achieve a minimum Green Star five or equivalent
6. Percentage of new and retrofitted Council office buildings that achieve a NABERSNZ 4 star rating or higher
7. Percentage of Council vehicle fleet converted to EVs
8. Number of public-facing Council facilities offering EV charging.
9. Number of hectares of regenerating native forest registered as Permanent Forest Sink Initiative covenants
10. Percentage of procurement projects that are assessed on their carbon reduction potential
11. Percentage of Council papers, investments, policies and proposals recording a climate analysis
12. Percentage of staff actively engaged in sustainability/carbon reducing behaviours

Table Nine: Council operational actions assessment against measurement framework criteria

Action	Project	Key success indicators	GHG reduction	Lead	WCC Investment	Investment by others	Co-benefits				Ease of implementing	Status
							Equity & wellbeing	Resilience	Economy & jobs	Environment		
Carbon measurement & management	CEMARS Global Covenant of Mayors FMA	-		Sustainability Team	$$					+	Easy	Ongoing - business case for ongoing funding awaiting approval
Waste	Sewage sludge processing solution	1	TBC	Wellington Water	TBC	TBC	TBC	TBC	TBC	TBC	Complex	Solution expected in September 2020
	Reducing waste sent to landfill	2		Resilience - Waste Operations	$$$$	$$$	+++	+++	+++	+++	Complex	Underway -restricted by sewage sludge
Building energy	Energy Management Strategy and Action Plan	3		Energy manager	$	$ Potential for EECA funding	+	+	+	+	Moderate	Underway
	NABERSNZ for WCC Buildings (Energy Ratings	6		Sustainability Team	$		+	+	+	+	Easy	Business case for approval
	Green Star & Home Star for WCC Buildings	5		Sustainability Team	TBD		+	+	+	+	Moderate	Business case for approval
	Displacing natural gas as a fuel source	4		Energy manager	TBD			+		+	Complex	Project scope completed
	Solar community facilities			Energy manager	$$			+	+	+	Moderate	Scoping work underway
Transport	EV first fleet	7, 8		Sustainability Team	$$$$	Not assessed		+		+	Easy	Business case for approval
Forestry	Carbon farming	9		Parks & recreation	$$$$		+++	+++	++	+++	Moderate	Underway
	Flexible working	-		HR Organisational development	Not assessed	Not assessed	+	+	+	+	Easy	Interim guidelines in place
	Water meters	-		GWRC & Wellington Water	TBC	TBC	+	+++	+++	+++	Moderate	Regional business case underway
	Procurement	10		Contracts & Procurement	TBC	TBC	+	+	+	+	Moderate	Further R&D required
	Improve Governance	11		Sustainability Team	TBC	TBC		+		+	Moderate	Further R&D required
	Staff engagement	12		Sustainability Team	TBC	TBC	+	+	+	+	Moderate	Further R&D required

Key - refer to Appendix One for more details

GHG Reduction potential at 2030		Investment 2020-2030		Co-benefits		Ease of implementing	
	Major GHG reduction potential	**$$$$**	>$10 million	+++	Major potential benefit	**C**	Complex
	Moderate GHG reduction potential	**$$$**	$10 million - $5 million	++	Moderate potential benefit	**M**	Moderate
	Minor GHG reduction potential	**$$**	$5 million - $1 million	+	Minor potential benefit	**E**	Easy
	Enabling GHG reduction	**$**	<$1 million				

Te Atakura steering group

A steering group has been established to contribute to the strategic directions of *Te Atakura's* delivery, as well as provide a forum for monitoring outcomes. The group will ensure the Council is tracking towards meeting its ambitious climate outcomes. The steering group membership is listed in *Appendix Four*.

The steering group will convene quarterly.

Steering group responsibilities:

The role of the group is to direct and support Te Atakura by fulfilling the following objectives:

- Provide key stakeholder representation at a level that can directly inform decisions and ensure opportunities for alignment with stakeholder expectations are realised.
- Promote Te Atakura within the organisation and with stakeholders.
- Promote the development of appropriate responses to both emissions reduction and adaptation.
- Ensuring appropriate project management practices are in place.
- Committing the resources required to deliver a successful outcome.
- Ensuring Te Atakura is successfully delivered according to objectives, scope, time, and quality, with expected benefits on track for realisation.

Monitoring progress:

The steering group has oversight of projects, prioritises effort and keeps institutions accountable for their delivery. Members will be furnished with the requisite background material prior to meetings, and are expected to:

- Contribute to robust and constructive discussion to ensure the strategy implementation is a success.
- Act as champions for Wellington's climate response.

The steering group will consider progress against each project, focussing on the following:

- Initiatives progressing on time, on budget and integrated into business as usual.
- Outcomes being achieved as planned.
- Identify conflicts requiring resolution and unanticipated barriers to implementation.
- Communicate positively framed key climate response messages.
- Make recommendations to streamline and prioritise effort for the best outcome.
- Celebrate with community engagement and press key achievement of milestones in implementation.

The steering group is expected to formally report to the Council Strategy Committee (CSC) annually in February.

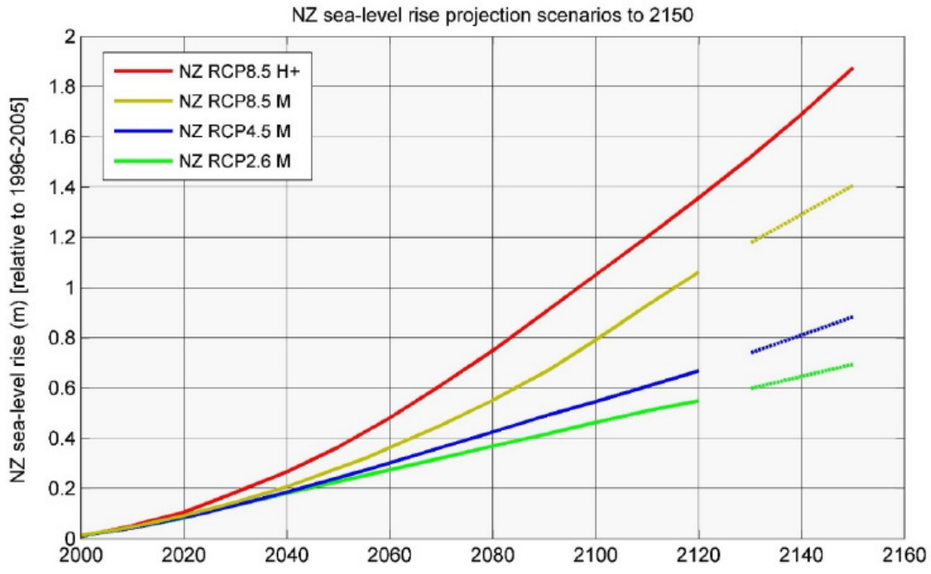
Three year review:

Early in 2023 the steering group will be requested to make recommendations on improvements to the Implementation plan (or Strategy if so needed) to CSC, including recommendations for adding or removing projects, objectives, and other recommendations as members see fit. This may be brought forwarded as needed.

Appendix One: Relevant excerpts from The Ministry for the Environment's Coastal Hazards and Climate Change – Guidance for Local Government

You can access the entire document here:
https://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/coastal-hazards-guide-final.pdf

Figure 27: Four scenarios of New Zealand-wide regional sea-level rise projections for use with this guidance, with extensions to 2150 based on Kopp et al (2014)



New Zealand scenario trajectories are out to 2120 (covering a minimum planning timeframe of at least 100 years), and the NZ H^+ scenario trajectory is out to 2150 from Kopp et al (2014) (K14). No further extrapolation of the Intergovernmental Panel on Climate Change-based scenarios beyond 2120 was possible, hence the rate of rise for K14 median projections for RCP2.6, RCP4.5 and RCP8.5 are shown as dashed lines from 2130, to provide extended projections to 2150. Note: all scenarios include a small sea-level rise (SLR) offset from the global mean SLR for the regional sea around New Zealand.

Table 10: Decadal increments for projections of sea-level rise (metres above 1986–2005 baseline) for the wider New Zealand region (for the four future scenarios from figure 27)

NZ SLR scenario Year	NZ RCP2.6 M (median) [m]	NZ RCP4.5 M (median) [m]	NZ RCP8.5 M (median) [m]	NZ RCP8.5 H^+ (83rd percentile) [m]
1986–2005	0	0	0	0
2020	0.08	0.08	0.09	0.11
2030	0.13	0.13	0.15	0.18
2040	0.18	0.19	0.21	0.27
2050	0.23	0.24	0.28	0.37
2060	0.27	0.30	0.36	0.48
2070	0.32	0.36	0.45	0.61
2080	0.37	0.42	0.55	0.75
2090	0.42	0.49	0.67	0.90
2100	0.46	0.55	0.79	1.05
2110	0.51	0.61	0.93	1.20
2120	0.55	0.67	1.06	1.36
2130	0.60*	0.74*	1.18*	1.52
2140	0.65*	0.81*	1.29*	1.69
2150	0.69*	0.88*	1.41*	1.88

* Extended set 2130–50 based on applying the same rate of rise of the relevant representative concentration pathway (RCP) median trajectories from Kopp et al, 2014 (K14) to the end values of the Intergovernmental Panel on Climate Change Fifth Assessment Report (IPCC AR5) projections. Columns 2, 3, 4: based on IPCC AR5 (Church et al, 2013a); and column 5: New Zealand RCP8.5 H^+ scenario (83rd percentile, from Kopp et al, 2014). Note: M = median; m = metres; NZ = New Zealand; SLR = sea-level rise. To determine the local SLR, a further component for persistent vertical land movement may need to be added (subsidence) or subtracted (uplift).

5.7.3 Minimum transitional allowances for sea-level rise

While working towards long-term adaptive planning (chapters 8–10), using the four recommended SLR scenarios for hazard, and risk and vulnerability assessments in engagement with communities, minimum transitional SLR allowances are provided for use in planning processes for four broad categories of development (table 12). An additional component may need to be applied to these SLR allowances for significant vertical land movement for some regions or local areas.

This guidance recommends categories of activities for which specific transitional SLR allowances should apply, to provide more clarity than the previous guidance (Ministry for the Environment, 2008a). SLR allowances are provided for four categories (A–D) of activities or types of development and are expressed as either scenarios or a minimum value to use (table 12).

The highest H^+ scenario should be the only scenario used for new developments eg, greenfields or major new infrastructure (category A). The use of just the H^+ scenario stems from the anticipated long life of such new developments, coupled with the requirement in the NZCPS 2010 to avoid future hazard risks (and also to consider tsunami hazards) over planning timeframes beyond 100 years (ie, 2120 onwards).

For informing where intensification of existing development is inadvisable (category B), no transitional SLR value is provided - rather the full dynamic adaptive pathways planning approach should be undertaken using all four SLR scenarios (at the scale appropriate to the proposed intensification), before further intensification occurs (to avoid compounding the future risk).

Category C generally covers existing development (and is the most challenging for adaptation), while category D applies to short-lived non-habitable assets and where consequences are low

or readily adaptable. The minimum transitional SLR values of 0.65 metres and 1 metre respectively for these latter two categories are generally applicable towards the end of the next 100 years (eg, up to 2120).

If transitional single values for SLR are used (eg, for categories C and D), hazard and risk assessments (chapters 6 and 8) should still be undertaken for a range of sea-level rise, using the scenarios (figure 27) or increments in SLR (including the transitional value) to better understand the hazard-risk profile and thresholds for a region or location.

Table 12: Minimum transitional New Zealand-wide SLR allowances and scenarios for use in planning instruments where a single value is required at local/district scale while in transition towards adaptive pathways planning using the New Zealand-wide SLR scenarios

Category	Description	Transitional response
A	Coastal subdivision, greenfield developments and major new infrastructure	Avoid hazard risk by using sea-level rise over more than 100 years and the H+ scenario
B	Changes in land use and redevelopment (intensification)	Adapt to hazards by conducting a risk assessment using the range of scenarios and using the pathways approach
C	Land-use planning controls for existing coastal development and assets planning. Use of single values at local/district scale transitional until dynamic adaptive pathways planning is undertaken	1.0 m SLR
D	Non-habitable short-lived assets with a functional need to be at the coast, and either low-consequences or readily adaptable (including services)	0.65 m SLR

Application to existing development or non-habitable assets (categories C and D)

Deriving a single value for SLR to apply nationally to existing development is difficult, given the wide range of sea-level trajectories into next century. It can lead to a rigid predetermination of the future if planning is based solely on this value. A range of risks exist for different scales of activity associated with coastal climate change impacts, and a lower SLR allowance may be appropriate for activities with a functional need to be near the coast, or short-lived non-habitable assets, where low consequences and a high degree of flexibility to adapt exists.

Transitional SLR values for categories C and D correspond to the equivalent values recommended for SLR to the 2090s from the previous Ministry for the Environment (2008a) guidance, with 1 metre SLR currently being used in a number of regional and district plans in New Zealand out to 2115. The 1 metre SLR value for coastal-hazard planning (in relation to existing development) was also supported by the Independent Peer Review Panel reviewing the Tonkin+Taylor coastal hazard assessment for Christchurch (Kenderdine et al, 2016).

The minimum SLR value (0.65 metres) for category D (non-habitable assets) aligns with the NZ RCP4.5 M scenario out to 2120. If the higher NZ RCP8.5 M scenario eventuated, the lower 0.65 metre transitional SLR (for Category D) would be reached earlier, around 2085–90 (figure 27 and table 10), but still compatible with short-lived assets.

Keeping similar transitional SLR values for this guidance also reflects the outcomes of syntheses of recent information published post-IPCC AR5 (Clark et al, 2015; Slangen et al, 2016a), which are still equivocal about the timing of additional polar ice sheet contributions to

SLR by 2100. Keeping similar values for SLR transitional values also accounts, in the interim, for the possibility of more effective global progress in reducing greenhouse gas emissions, although this would have to occur quickly in the next few decades to constrain SLR (section 5.4.2).

In the previous Ministry for the Environment (2008a) guidance, a risk-based appraisal for the particular application was recommended in selecting an appropriate single SLR value (above a minimum), rather than carrying forward a range of scenarios into hazard and risk assessments, and evaluating adaptation options which is advised in this revision. Policy 24(1) in NZCPS 2010 directs the identification of areas 'potentially affected' by coastal hazards and climate change (also in Policy 25), giving priority to areas at 'high risk of being affected'. Policy 27 focuses on existing development 'likely to be affected'. The wording implies a risk-based approach, focusing on the effects or impacts (Department of Conservation, 2017), rather than selecting the 'most likely' sea-level rise *scenario*, then applying that to hazard and risk assessments.

Use of a risk-based approach to selecting a sea-level rise magnitude is shown schematically in figure 28. This shows where, for a specified planning timeframe, a *generalised* probability distribution[75] of possible SLR magnitudes in a planning timeframe, peaking with a 'most likely' SLR *value*, will invariably form a skewed-tail distribution influenced by a wider range of polar ice sheet responses (Kopp et al, 2014; Jevrejeva et al, 2014; Slangen et al, 2016a).

In many areas, hazard consequences (impacts) will escalate rapidly as sea level rises above a local or regional SLR threshold for damaging or disruptive coastal hazards events (figure 28).

A generalised risk profile with SLR can be obtained by multiplying the likelihood SLR distribution curve by the consequences curve, as shown in the lower panel of figure 28. This simplified example demonstrates that, in most cases, the peak of the risk curve will coincide with an SLR higher than the 'most likely' SLR.

[75] Noting that quantifying such a distribution is not possible – only the general skewed-tail shape of the distribution (blue curve).

Appendix Two: Measurement framework criterion for assessing actions

How - our approach

1. We are committed to the following evidence based approach to identify and assess the actions included in this plan. Given our action plan is evolving our evidence-based approach will be an iterative process.
2. **Identify actions:** A range of committed and potential actions to help reduce city-wide emissions were included in Te Atakura - first to Zero
3. **Narrow actions and develop implementation details:** Further analysis was undertaken of potential actions and business cases for recommended actions were developed
4. **Develop criteria to prioritise actions:** Criteria and methodology were developed in consultation with key WCC staff and with the assistance of the C40 cities measurement and planning resources (see criteria below)
5. **Evaluate actions using criteria:** Actions were evaluated against the criteria and received a major, moderate or minor score (see below)
6. **Review evaluation:** The action criteria evaluations were reviewed by key WCC staff
7. **Identify further actions for investigation:** Additional actions are being identified that could have major reduction potential to help achieve our 2030 target
8. **R&D to evaluation further actions:** A business case seeking funding for R&D is awaiting approval
9. **Identify and commit to further actions**

Our criteria

Greenhouse gas reduction potential

Key	Potential TCO2e reduced per year at 2030	Potential TCO2e reduced over the project lifetime
Major reduction potential	Over 20,000 TCO2e	Over 500,000 TCO2e
Moderate reduction potential	Between 1,000 - 20,000 TCO2e	Between 100,000 - 500,000 TCO2e
Low reduction potential	Less than 1,000 TCO2e	Less than 100,000 TCO2e
Enabling or accelerating	Not possible to quantify	Not possible to quantify

Co-benefits

Measure	Description
Equity & Wellbeing	Health and wellbeing, safety, affordability, access and community
Resilience	Resilience, reliability and natural capital
Economy & jobs	Quality jobs, economic innovation, workforce development and long-term societal savings
Environment	Air quality, water quality, waste reduction, biodiversity, ecological services

Value	Key
Major potential benefit	✚✚✚
Moderate potential benefit	✚✚
Minor potential benefit	✚

Cost

Key	Investment by WCC 2020-2030	Investment by Others 2020-2030	$/TCO2e
$	Less than $1 million	Less than $1 million	
$ $	$1 million to $ 5 million	$1 million to $ 5 million	
$ $ $	$5 million to $10 million	$5 million to $10 million	
$ $ $ $	Over $10 million	Over $10 million	

Ease of implementing

Key	Ease of implementing
Easy	• Limited number & complexity of stakeholders to engage • Implementation can primarily be managed in-house by staff and minimal additional resources required • No changes to regulatory framework/resource consents required
Moderate	• Moderate number of stakeholders & complexity • Moderate resourcing required • Resource consents may be required • Some changes may be required to City planning and policy
Complex	• High number of stakeholders & complexity Implementation will take years • High resourcing required • Publically notified resource consents • Legislative changes required

Appendix Three: City-wide committed and recommended actions & GHG reduction potential at 2030

Action	Sector	Potential tCO2e reduced 2030	Key Assumptions
LGWM - Indicative package	Transport	24934	Modelled based on LGWM RPI & Indicative Package Modelling Report. Estimated 10% reduction in city-wide on-road transport emissions by 2036 from 2013 baseline, assumes that 75% of these reductions will be realised by 2030. This reduction is from reduced VKT due to increased public transport, cycling etc - does not include reductions from MOT forecast increases in fuel efficiencies & EVs.
Car Sharing enhancement	Transport	15600	Modelled based on assumption that there could be approx. 840 car share vehicles in the City by 2030 and for every car share vehicle six private vehicles will be sold/ taken off the road.
E-scooter sharing	Transport	118	Currently BAU doesn't forecast expansion
Clifton Park Charging Hub	Transport	100	Based on modelling in Clifton Park Charging Hub Business Case
Public Places EV charger rollout	Transport	1531	Based on modelling in Public Places EV Charger Rollout Business Case
PFG - Special character areas	Urban form	1040	Modelling based on reduction in VKTs in Special Character Scenarios - transport impacts report
Home Energy Saver Expansion	Energy	728	Based on modelling in Business Case that 4X as many households will be visited under the expansion programme and that there will be similar adoption rate of actions from participants as per previous years.
Business Energy Saver Pilot	Energy	12554	Based on modelling in Business Case that 180 businesses will receive an audit per annum and approx. 90% will invest in at least one energy efficiency improvement. NB Pilot is for 5 years - If successful and programme continues reductions could be over 25000 tCO2e .
High performance building incentives	Energy	378	Currently BAU. Low uptake of incentive so far. More R&D needed to determine what future incentives could look like to help estimate future reduction potential from enhanced building incentives.
Warmer kiwi homes	Energy	152	Assumed similar numbers to past 10 years. However; need to confirm what % of eligible houses have already received grants - TBC.
Forestry opportunities	Forestry		More R&D required to determine potential city-wide sequestration potential 2020-2030
Council operational actions	Council	22907	Based on assumption that viable sewage sludge solution will be implemented and Council will meet 33% waste reduction target by 2026.
Other Actions - reliant on Central Government support			
Increasing EVs and fuel efficient vehicles in City fleet	Transport	42,960	Based on MOT high EV uptake modelling and assumes Wellington City remains responsible for approx 2.25% of National on road transport emissions in 2030
Increasing renewables in national grid	Energy	57356	Assumes 93% Renewables in National Grid based on Transpower's forecasts.
TOTAL estimated TC02-e reduced from projects at 2030		80,043	
Total TC02-e reduced from projects + other actions reliant on Central Govt support at 2030		180,359	
Target TC02-e to reduce at 2030		452139	City net emissions at 2001 were 1,051,486 - the 2030 target is to reduce emissions by 43% from 2001 baseline
Remaining TC02-e reductions needed		271,780	
% Reduction from base year WCC projects (net)		**13.8%**	Includes actual reductions made between 2001 & 2019. May decrease due to increased forestry harvesting
% Reduction from base year WCC projects + actions reliant on Central Govt support (net)		**23.4%**	Includes actual reductions made between 2001 & 2019. May decrease due to increased forestry harvesting
Remaining reductions needed (%)		**19.6%**	

Appendix Four: Steering group members

Name	Role	Specific responsibility
Moana Mackey	Sponsor	• Ultimately responsible for the project, supported by the group. • Champions and leads project with ELT and Councillors.
Manager Climate Change Response	Owner	• Monitors and controls the project at a high level to ensure Te Atakura meets its objectives. • Ensure WCC resources required are made available. • Acts as the WCC officer for all engagement with Councillors unless delegated otherwise.
Sustainability Manager	Project Manager	• Leads day-to-day case management of team and project. • Monitors & manages risks/ issues, escalating when necessary. • Reports to Group, as well as ensuring the timely development and distribution of meeting packs and minutes.
Cr Tamatha Paul	Member Chair	• Leads Te Atakura communication externally and politically
Cr Laurie Foon	Member	• Supports Te Atakura communication externally and politically
Victoria University of Wellington	Member	• Academic overview and input
Greater Wellington Regional Council	Member	• Regional and Public Transport perspective
Generation Zero	Member	• Youth, ERG and National viewpoints
Otago University	Member	• Health and Wellbeing viewpoint
Workshop	Member	• Communications and creative views.
Wellington International Airport Limited	Member	• Air travel and city connections perspective
Chamber of Commerce	Member	• All of business perspective on climate issues and projects.
Insurance Council	Member	• Adaptation view and view on multi hazard threats impacting climate action
Ngati Toa	Member	• Iwi viewpoints
Port Nicholson Block Settlement Trust	Member	• Iwi viewpoints
CentrePort	Member	• Marine and freight perspectives
Sustainable Business Network	Member	• Sustainable small business perspectives
Capital and Coast District Health Board	Member	• Large employer and health perspectives
Meridian Energy	Member	• Energy industry expertise
Arts Representative	Member	• Creative and communications perspectives

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