

## Climate Change Strategy Implementation Plan: Summary of progress to date on *Actions*

Colour key: Actions to be undertaken by GWRC in conjunction with other partners

Policies	Actions 2015-2017		Examples/modes of delivery	Status of Action at Oct 2015	Lead departments	Summary of progress
1.1 Seek to remove barriers to the use and development of renewable energy and improved energy efficiency in the region	1.1.A	Partner with other councils and agencies to support community-driven innovations in renewable energy	Scale up Smart Energy Challenge	Not yet started	Strategic Planning	<ul style="list-style-type: none"> <li>Supported the further development of the Smart Energy Challenge in 2016 through sponsorship and advice. Programme was expanded to include other sectors and to reach beyond only start-up businesses, and was rebranded the Low Carbon Challenge. Supporting again in 2017 by contributing to the Wellington Low Carbon Partnership Fund and providing advice to teams.</li> <li>Participated in the 2016 'Yes We Can' conference designed to identify how renewable energy could help NZ meet emissions reduction target under the Paris agreement.</li> <li>Sponsored the Evolocity programme: A project based learning programme in high schools in which teams of students are equipped with an electric motor kit and, with tutoring and a series of hands-on workshops throughout the year, they design and build their very own electric vehicles.</li> <li>Convene the Wellington Region Electric Vehicle Working Group (REVWG) which is comprised of officers from councils across the region with participation from central govt. agencies and the private sector. The group operates as a coordinating mechanism for the promotion of electric vehicles (EV) generally, and in relation to the development of charging infrastructure.</li> <li>It is acknowledged that the last two activities listed here relate more to Policy 1.1 than to Action 1.1.A directly.</li> </ul>
	1.1.B	Give particular regard to the benefits from renewable energy when considering resource consents and notices of requirement, and when making a change, variation or conducting a review of the regional plan	Resource Consents Process	Underway and ongoing	Environmental Policy, Environmental Regulation	<ul style="list-style-type: none"> <li>The benefits are recognised in both the Regional Policy Statement (RPS) and Proposed Natural Resources Plan (PNRP)</li> <li>Policy 7, RPS directs regional and district plans to recognise the benefits of energy generated from renewable energy resources</li> <li>Policies P12 to P14 of PNRP recognise the benefits of renewable energy generation activities</li> <li>Advocacy is provided through submissions on district plan changes and notified district council resource consents for these processes to give effect to the RPS</li> </ul>

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	1.1.C	Develop a framework to support and promote renewable energy generation, energy efficiency measures, and a secure and resilient transmission and distribution via the Regional Policy Statement and Regional Plan	Regional Policy Statement and Regional Plan	Underway	Environmental Policy	<ul style="list-style-type: none"> <li>• Summary of progress provided for action 1.1.B also applies to this action.</li> <li>• The Regional Natural Hazards Management Strategy (which has been, or is in the process of being adopted by all Councils on the western side of the Rimutaka hill) supports the resilience aspect of this action through its focus on risk reduction.</li> </ul>
	1.1.D	Improve household energy efficiency through providing a rating framework such as the Warm Greater Wellington home insulation scheme	Warm Greater Wellington home insulation scheme	Underway and ongoing	Finance	The scheme continues, providing region-wide financial assistance (interest bearing) for insulation for houses built prior to the year 2000. In the Wainuiomata / Masterton districts only where air pollution is a problem, financial assistance (interest bearing) for clean heating is also offered. The baseline measure for the programme was 1,376 applications (2014). The annual target is 1,500. 1,014 applications were received in 2015/16. The year to date figure for 2016/17 at 31 Dec 2016 was 280.
	1.1.E	Explore opportunities for renewable energy generation and storage in the Wellington region		Underway	WRS Office	Officers are keeping a watching brief and participate in relevant industry initiatives.
1.2 Promote and provide attractive and accessible low emission transport in our own fleet and in future public transport contracts	1.2.A	Encourage active travel (e.g. walking, cycling, scootering) through school and workplace travel programmes	Aotearoa Bike challenge, Movin' March, Go by Bike Day, Walk to Work Day, Pedal Ready cycle skills training	Underway and ongoing	Sustainable Transport	<p>Greater Wellington's Sustainable Transport team coordinate a range of initiatives designed to promote active travel. Key initiatives include the Aotearoa Bike Challenge through which 1,916 participants from 198 workplaces cycled a total of 285,719kms during February 2017, saving 57 tonnes of CO2.</p> <p>For the active travel month promotion to schools "Movin March" there were 47,090 active trips (average 1km assumed but could easily be 2km) by children over a 1 month period. It is estimated that this saved around 9 tonnes of CO2.</p>

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	1.2.B	Support carpool and car share initiatives	Smart Travel	Underway and ongoing	Sustainable Transport	GWRC has facilitated Let's Carpool in the Wellington region since 2008. In 2012 GWRC worked with Auckland Transport to turn it into a national website with 6 other regions joining. These regions are in some places regional councils and in other places city councils. Let's Carpool has seen an average of 11 registrations per week but it is too hard to quantify how many carpooling trips eventuate from these registrations. GWRC has recently shifted to a new platform 'Smart Travel'. This new platform has considerably more functionality, including its ability to be used as an app, its multi-modal functionality (ie. can be used for cycling, walking, carpooling and public transport) and the fact that it is an incentives driven platform to encourage people to log their trips. Nine regions across NZ are currently supporting Smart Travel, and a tenth is about to join.
	1.2.C	Increase public transport patronage through improvements to the regional passenger transport network	Wellington Regional Land Transport Plan and Public Transport Plan	Underway and ongoing	Public Transport	<p>Metrics relevant to this action are provided on page 13 of the Annual Monitoring Report and demonstrate an overall trend of increasing public transport patronage. <a href="http://www.gw.govt.nz/assets/Transport/Regional-transport/RLTP-2015/Annual-Monitoring-2015-onwards/RLTP-Annual-Monitoring-Report-2015-16.pdf">http://www.gw.govt.nz/assets/Transport/Regional-transport/RLTP-2015/Annual-Monitoring-2015-onwards/RLTP-Annual-Monitoring-Report-2015-16.pdf</a> It is acknowledged this data only covers the first few months after this strategy was implemented. Annual patronage metrics are showing consistent increases in patronage across the rail network as well as increases in bus patronage in Wellington City.</p> <p>New routes designed to further increase patronage will be in operation from mid-2018. The new bus network in Wellington city will provide a simpler network with more frequent services available to more people, with less service duplication and fewer buses on the Golden Mile.</p>
	1.2.D	Investigate use of sustainable (low carbon) fuel sources for passenger services		Underway and ongoing	Public Transport	This action was primarily progressed through the GWRCs approach to the Public Transport Operating Model (PTOM) bus procurement process, which was the first in New Zealand to incentivise operators to provide low emission bus fleets.
	1.2.E	Work towards full electrification of the regional bus fleet		Underway	Public Transport	Like 1.2.D, this action was primarily progressed through the GWRCs approach to the Public Transport Operating Model (PTOM) bus procurement process, which was the first in New Zealand to incentivise operators to provide low emission bus fleets. The PTOM contract with Transit includes the phase in of 32 electric buses from July 2018.

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	1.2.F	Advocate for land use development that is well-integrated with transport infrastructure and supports a compact, well-designed and sustainable regional form		Underway	Corporate Planning, Environmental Policy	<p>Notable examples include:</p> <ul style="list-style-type: none"> <li>The co-design and consultation process for the RiverLink project (which will deliver better flood protection, better lifestyle and improved transport links for the people of central Lower Hutt)</li> </ul> <p>And submissions to:</p> <ul style="list-style-type: none"> <li>MBIE regarding the Urban Development Authorities proposal</li> <li>The Productivity Commission regarding the Better Urban Planning report.</li> <li>Wellington region Territorial Authorities regarding 2017/18 Annual Plan Consultation Documents and District Plan reviews</li> </ul> <p>GWRC's above submissions emphasised the benefits of better integration between land use and infrastructure planning, and of well-designed intensive development in urbanised areas.</p>
1.3 Encourage cleaner production and disposal practices in business and agriculture	1.3.A	Work with businesses to improve energy efficiency and reduce environmental impact	Take Charge Business Pollution Prevention programme	Underway and ongoing	Environmental Regulation	<p>Greater Wellington does not operate an energy efficiency advisory function for businesses (see action 1.1.D for info on the Healthy Homes initiative for the residential sector). Work of this kind is primarily progressed by the Energy Efficiency and Conservation Authority through the EECA Business Programme.</p> <p>GWRC are currently developing a regional '2050 Calculator' which will identify potential long term emissions reductions at a sector level. The calculator is intended to assist the Wellington region to transition towards a low carbon economy between now and the middle of the century.</p> <p>Take Charge is GWRC's pollution prevention programme, which is aimed at improving the environmental performance of small to medium sized businesses across the Wellington region. The Take Charge programme was introduced to the Te Awarua o Porirua Harbour Catchment where a number of businesses were audited to see if they:</p> <ul style="list-style-type: none"> <li>Comply with our regional rules</li> <li>Have adequate equipment and the correct processes and procedures in place to minimise the risk of contaminants entering the environment</li> </ul>
	1.3.B	Promote agricultural efficiency measures by working with farmers		Underway and ongoing	Land Mgmt	Agricultural efficiency is discussed with landowners when developing sustainability and property conservation plans, and during work with rural community groups focused on soil conservation.

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	1.3.C	Work through the Regional Waste Forum to continually improve waste practices and increase recycling	Regional Waste Forum	Underway and ongoing	Strategic Planning	<ul style="list-style-type: none"> <li>• Officer and Councillor participation in the Regional Waste Forum continues.</li> <li>• Officers also participate in the working group that is currently updating the regional Waste Management and Minimisation plan.</li> </ul>
1.4 Demonstrate a commitment to low emissions across all our corporate activities and investments	1.4.A	Implement actions in the GWRC Corporate Sustainability Action Plan relating to council buildings and installations, employee travel, waste and resources, and policies and procurement	GWRC Corporate Sustainability Action Plan	Underway and ongoing	Corporate Planning	<p><b>Council buildings and installations:</b></p> <ul style="list-style-type: none"> <li>• Energy reduction focus had been on Shed 39 (main location with ~300 staff)</li> <li>• Uncertainty over staying at Shed 39 following Kaikoura earthquake has reduced viability of investing in monitoring system and efficiency upgrades (identified to have potential for ~ 10-20% annual savings).</li> <li>• Approximately 50% of Shed 39 staff temporarily located at new Walter St headquarters following earthquake</li> </ul> <p><b>Employee travel:</b></p> <ul style="list-style-type: none"> <li>• In 2015/16, 20% cycled, walked or ran to work. 26% used public transport and 12% carpooled. 31% drove to work alone.</li> <li>• Shed 39 is equipped with shower facilities and secure bike shed - enabling active modes</li> </ul> <p><b>Waste and resources:</b></p> <ul style="list-style-type: none"> <li>• Waste related emissions reduced by 18% in the 2015/16 year</li> <li>• The introduction of the 'Follow me print' system reduced paper consumption by 21%</li> <li>• Staff survey demonstrates that over 90% of staff regularly 'always or frequently' recycle and 64% compost</li> </ul> <p><b>Policies and procurement:</b></p> <ul style="list-style-type: none"> <li>• Procurement system is currently undergoing review and when updated (2017/18) will encourage contractors and suppliers to demonstrate sustainable behaviours</li> </ul>

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	1.4.B	Develop emissions reductions targets using the 2014/15 GWRC carbon inventory as a baseline. Measure and report future emissions increases or decreases.	GWRC Corporate Sustainability Action Plan	Underway and ongoing	Corporate Planning	<ul style="list-style-type: none"> <li>• Corporate emissions reduction targets were developed and adopted in principle by ELT in Feb 2016. The targets adopted were 'investment targets', as opposed to those that could be achieved via a 'business as usual' approach.</li> <li>• The investment targets are 2019/20 = 10%; 2024/25 = 25%; 2029/30 = 45%; 2045/50 = 70%.</li> <li>• Targets were also defined (and adopted in principle) for each key emissions source (e.g. vehicle fleet, waste) across the same time bands.</li> <li>• Following the adoption in principle, officers began defining the behavioural changes, technologies and investment required to achieve them.</li> <li>• Uncertainty around office locations following the Kaikoura earthquake have made defining the investment pathway problematic, and a detailed approach cannot be defined at the current time.</li> <li>• Corporate emissions reduced by 3.8% between 2014/15 and 2015/16</li> <li>• The corporate emissions inventory is currently being updated and results for 2016/17 will be available in September</li> </ul>
	1.4.C	Divest the council from any direct investment in fossil fuel extraction industries and investigate existing non direct investment with a view to preventing future investment where practical.		Not yet started	Finance	During 2016 Officers determined that GWRC has no direct investments in fossil fuel extraction industries, and began correspondence with relevant banks to investigate existing non direct investment (with a view to preventing future investment where practical). This work is ongoing.
1.5 Support and coordinate tree planting and ecological restoration projects and protect carbon sinks from the impacts of invasive species	1.5.A	Support provision of legal protection of forest land which can sequester carbon and safeguard natural ecosystems against development		Underway and ongoing	Biodiversity	GWRC has continued to operate a QEII covenant support programme (delivered by the Biodiversity department) which makes \$50k funding available annually to QEII to support the fencing off of areas being legally protected in perpetuity by QEII covenants. GWRC funds 40% of the cost of fencing, QEII funds 30% and the landowner funds the other 30%. The majority (but not all) of these areas are indigenous forest remnants.
	1.5.B	Maintain Regional park and forest land in covenant for at least 50 years as part of the Permanent Forest Sink Initiative	Permanent Forest Sink Initiative	Completed	Parks	442ha of forest is registered under the Permanent Forest Sink Initiative (this forest inclusion in the PFSI pre dates this strategy's implementation. Monitoring in accordance with the rules of the scheme continues.

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	1.5.C	Advocate and provide incentives for tree planting and promote restoration of wetlands	Wellington Region Erosion Control Initiative, Afforestation Grant Scheme	Underway and ongoing	Land Mgmt.	The Wellington Region Erosion Control programme continues to be delivered over the whole region. The target for 2016/17 is 450 hectares of erosion prone land to be planted in trees. In the year to date 30 March 2017, 300 hectares have been planted. Further planting is scheduled to take place in June. The Akura nursery has an estimated 30,000 willow poles available, and contract labour to assist with planting is being finalised. A system that will enable the carbon sequestration associated with these activities is currently being developed.
	1.5.D	Consider policy 1.5 when implementing Sustainable Land Use and Soil Conservation Plans		Underway and ongoing	Land Mgmt.	Policy 1.5 is considered as standard practice
	1.5.E	Protect native forest and vegetation by maintaining large scale pest animal management programmes	Regional Pest Management Strategy	Underway and ongoing	Biosecurity	<p>The Regional Possum Predator Control Programme aims to control predators which are a serious threat to our native forests, and this helps maintain the forests carbon sequestration capacity. The programme is 100% complete (82,000 hectares). The annual target, to maintain low numbers of possums (less than 5% Residual Trap Catch), has been achieved.</p> <p>The Key Native Ecosystem programme aims to protect areas that are important for native plants and animals in the Wellington region. Through this programme possums, mustelids and rats are controlled in 58 sites. The annual target for possums (less than 5% Residual Trap catch) has been achieved. The annual targets for mustelids and rats (less than 2% and 10% Tracking Tunnel Index) have been largely met.</p>
	1.5.F	Work with community groups to facilitate and support tree planting and ecological restoration activities		Underway and ongoing	Biodiversity, Parks	<p>Through the Wairarapa Moana Wetlands project, the Biodiversity department has worked with the following groups to plant approximately 2000m<sup>2</sup>:</p> <ul style="list-style-type: none"> <li>• The South Wairarapa Biodiversity Group</li> <li>• Lake Ōnoke, Friends of Ōnoke Spit</li> <li>• The Featherston Youth Programme</li> <li>• Ducks Unlimited</li> </ul> <p>Via the Te Awarua-o-Porirua Harbour and Catchment Strategy and Action Plan the department has worked with Porirua schools and community groups to plant approximately 2200m<sup>2</sup>. Through the Pauatahanui Vegetation Framework programme, 4100 trees have been planted in the Porirua catchment.</p>

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2.1 Consider the effects of climate change as an integral part of planning and decision-making	2.1.A	Develop a policy of assessing possible climate change implications of all projects/ proposals in council papers, reports and project plans		Not yet started	Democratic Services	A process was implemented in May 2017. The process is set out in the GWRC Climate Change Consideration Guide.
	2.1.B	Fully consider the effects of climate change when assessing resource consent applications and notices of requirement		Underway	Environmental Regulation	Environmental Regulation's process for considering the effects of climate change predated the adoption of the Climate Change Strategy, as these were already set out in the Resource Management Act 1991. The RMA requires that all decisions have particular regard to the effects of climate change on natural and physical resources. Since the adoption of the Strategy, the existing techniques and information used have been enhanced by increased knowledge about the importance of adaptive pathways planning and updated information about the effects of climate change.
	2.1.C	Where possible incorporate the aims, objectives and actions identified in this Strategy into regulatory and planning processes		Underway	Environmental Policy, Environmental Regulation, Corporate Planning	The aims, objectives and actions in this strategy are consistent with those set out in the Regional Plan, the Regional Policy Statement and the proposed Natural Resources Plan. The 2018 - 2028 Long Term Plan (currently being developed) will incorporate climate change at an individual activity level.  GWRC continues to advocate for the inclusion of aims, objectives and actions consistent with those in this strategy in planning documents of which it has influence alongside central and regional stakeholders, for example the Regional Land Transport Plan and the Regional Public Transport Plan.
	2.1.D	Assess whether climate change implications have been adequately considered when reviewing existing policies		Not yet started	All departments	A process was implemented in May 2017. The process is set out in the GWRC Climate Change Consideration Guide and is triggered via the Project Management Office process.



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	2.1.E	For each activity or hazard being considered, identify whether it is vulnerable to climate change, what the relevant climate factors are and, if appropriate, evaluate risks and priorities and weigh these against other risks and opportunities		Underway	Flood Protection, Public Transport, Environmental Science	This work was already underway in some departments before the strategy was implemented, for example - flood protection. A GWRC wide process was implemented in May 2017. The process is set out in the GWRC Climate Change Consideration Guide and is triggered via the Project Management Office process, the Activities Review being conducted for the 2018 to 2028 Long Term Plan and the requirement to consider climate change in all Council and Committee papers.
2.1 continued	2.1.F	Identify climate change risks to GWRC's functions and services and their estimated consequences and costs, as well as actions to mitigate each risk in GWRC's Risk Register		Not yet started	Strategic Planning	Progressing this action required two key components to be established. Firstly, a process for considering the effects of climate change that could be applied consistently across the organisation. This has been achieved via the process which is set out in the GWRC Climate Change Consideration Guide. Secondly, updated projections of how climate change related impacts could manifest within the region, presented in a meaningful format. GWRC have commissioned a report from NIWA which 'downscales' the national projections (derived from IPCC modelling) and provides data for a range of variables to the end of the century. The report and its associated data (the variables) will be released in August 2017. The data can be analysed using GIS, which will enable officers to identify climate change risks to GWRC's functions and services. The implications of those impacts will then be determined over the subsequent years following a process that will be articulated in the 2018-2028 Long Term Plan. That process will include estimating consequences and costs, as well as identifying actions to mitigate each risk and updating GWRC's Risk Register accordingly.
2.2 Increase long-term adaptive capacity through the use of adaptive	2.2.A	Construct adaptation pathways maps in order to contrast and compare different flood management options in the region		Underway	Flood Protection, Strategic Pl.	Adaptive pathways planning has been adopted as a core approach to the development of flood plain management plans. For example the approach was utilised in the Hutt City River Link project.

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planning tools and techniques	2.2.B	Use adaptive planning concepts to understand and evaluate the potential long-term consequences of different policy actions	Sustainable Delta Game workshops	Underway	Strategic Planning	<p>GWRC supported the development of the Sustainable Delta game (facilitated by Victoria University in conjunction with Deltares in the Netherlands), and two game versions with NZ settings were produced. One is situated in a coastal environment and the other for a river environment. The games are used for training purposes and to introduce stakeholders to the concept of adaptive planning. The game has been played multiple times both internally and with external stakeholders.</p> <p>GWRC also sponsored, and helped design (along with other regional councils) a New Zealand version of the educational game Aqua Republica. The game teaches a holistic approach to catchment management, including the ability to manage climate change, implement adaptive planning and respond to changing demands from stakeholders. In April GWRC ran an internal competition, with 13 teams of 2-7 staff from across the organisation competing.</p>
	2.2.C	Support research into new technologies and new methods of adaptation to minimise risks from a changing climate		Not yet started	Strategic Planning	<p>Focus in 2016 was developing and using the Adaptive pathways and Aqua Republica games, and applying adaptive planning techniques to planning processes such as the River Link project.</p> <p>In 2017 GWRC supported the cross sector employee development programme 'Smart Seeds' (which is focused on generating "fresh ideas for future infrastructure") and provided an opportunity for four staff to participate. During the phase in which the team challenges were developed by the programme's support partners, GWRC advocated for climate change adaptation to be a key focus area.</p>
2.3 Identify key information requirements relating to climate change effects	2.3.A	Obtain up to date projections of climate change effects downscaled to the regional, catchment and local area level and apply this information consistently across all climate-relevant council plans and operations*		Underway	Environmental Science	<p>GWRC have commissioned a report from NIWA which 'downscales' the national projections (derived from IPCC modelling) and provides data for a range of variables to the end of the century. The report and its associated data (the variables) will be finalised released in August 2017. The data can be analysed using GIS, which will enable officers to utilise this information at regional, catchment and local area levels going forward. The process set out in the Climate Change Consideration Guide will ensure that over time, the information will be applied consistently across all climate-relevant council plans and operations.</p> <p>Other downscaling and interpretation has been incorporated in flood hazard mapping across the region; and has also been conducted for the Ruamahanga and Porirua Whaitua and is being applied to work in those areas as applicable.</p>

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	2.3.B	Provide sound technical input on the likely impact of localised climate change effects on regional resources, meteorological hazards and ecosystems to improve the overall robustness and adaptability of policy and operational approaches		Underway	Environmental Science	Activity of this type is ongoing and has been enhanced by the NIWA Regional Downscaling mentioned above at action 2.3.A. Key projects in which Environmental Science have provided climate change related input include the development of the Natural Hazards Management Strategy, the Collaborative Modelling Projects for the Porirua and Ruamahanga catchments and the Water Wairarapa project. Other relevant initiatives include the seasonal climate briefings that are provided to a range of stakeholders across the region. These now include detailed regional temperature anomaly maps and over time other parameters of interest (e.g. wind speed anomalies – important for air pollution dispersion, climate change and drought) will be included.
	2.3.C	Develop an ongoing environmental monitoring programme that can be sustained over the long term to help assess regional climate change threats and vulnerabilities	E.g. Driver- Pressure- State- Impacts- Response (DPSIR) model to provide context for climate change threats	Not yet started	Environmental Science, Biodiversity	A climate monitoring review has been submitted for the forthcoming 2018-28 Long Term Plan in order to secure additional funding to increase our network of observing climate stations in order to be able to monitor long-term climatic changes and impacts/vulnerabilities in the most robust and direct way possible. This will cover gaps in places where NIWA and MetService don't have any climate stations. An example is the direct measurement of snow, which would be fundamental to assess the potential impacts of climate change on alpine biodiversity. The long-term monitoring of wind gusts on the western coast will also be used to better assess the climate impacts on dune ecosystems. In addition to this Environmental Science has ongoing research to study the impacts of climate drivers (e.g. El Nino and westerly winds) on the regional climate threats (e.g. droughts and floods). A new 'climate drivers report' has been commissioned and will be available by the end of 2018.
2.4 Implement planning and policy measures that increase long-term resilience to climate change impacts	2.4.A	<b>Integrate climate change mitigation and adaptation into regional spatial planning, including public investment and the management of private development</b>		Not yet started	Strategic Planning	Regional Spatial planning initiative has not been progressed by the region's councils.
	2.4.B	<b>Ensure that climate change is a prominent feature in the development of the Regional Natural Hazards Strategy</b>	Regional Natural Hazards Strategy	Underway	Environmental Policy	Achieved - climate change is a prominent feature and is integrated throughout the strategy
	2.4.C	Map the major watercourses/floodplains in the region with allowances for climate change based on the best available data		Underway	Flood Protection	Climate change projections based on Ministry for the Environment guidance are incorporated into all Flood Plain Management plans.

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	2.4.D	Undertake modelling to assess potential effects of sea level rise on freshwater abstraction	Sustainable Yield Modelling for Waiwhetu Aquifer	Underway and ongoing	Water Supply, Environmental Science	The Sustainable Yield Model (SYM) used for water supply strategic planning was upgraded in 2015/16 to include the ability to assess the effects of sea level rise on aquifer abstraction.
	2.4.E	Assess future water storage requirements for Wellington region's water supply in the context of projected climate change effects		Underway	Water Supply, Environmental Science	As part of the 2015/16 Sustainable Yield Model (SYM) upgrade NIWA also provided downscaled hydroclimate datasets consistent with the IPCC 5th assessment. Modelling was completed in 2016/17 using the upgraded SYM to assess the timing for the next major water source upgrade as well as the storage requirements and other upgrades needed to mitigate the effects of climate change through to the end of the century.
3.1 Share knowledge	3.1.A	Participate in national and international forums where there are opportunities to connect with other local government organisations so that experiences and learnings can be shared	Climate Change Impacts and Implications Research Programme (MBIE), Transforming Cities Thematic Research Initiative (University of Auckland), ICLEI	Underway and ongoing	Multiple departments	<p>Officers have participated in multiple forums, and working groups, provided feedback on numerous central government, crown research and private sector initiatives and documents.</p> <p>The most salient include:</p> <ul style="list-style-type: none"> <li>Climate Change Impacts and Implications programme</li> <li>MfEs updated Coastal Hazards Guidance</li> <li>Adaptation Technical Working Group</li> <li>The future is electric - electric vehicle symposium (organised by GWRC)</li> <li>Climate change roundtable</li> <li>Annual Climate Change and Business conference</li> <li>Deep South Science Challenge - engagement</li> </ul> <p>it should be noted that GWRC has participated in and/or facilitated a number of local and regional initiatives including:</p> <ul style="list-style-type: none"> <li>Climate/Coastal Resilience Local Govt Exchanges - seminars</li> <li>100 Resilient Cities - programme and strategy development</li> <li>The Age of Resilience seminars</li> </ul>

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	3.1.B Identify successful local government examples of adaptation actions and evaluate their suitability for addressing climate risks in the Wellington region		Underway and ongoing	Strategic Planning	Officers are keeping a watching brief and participating in relevant seminars and training opportunities. Key initiatives via which this work can progress with greater applicability have recently been established, or have reached a stage at which the outputs provide meaningful information and include the central government facilitated Adaptation Technical Working Group and the Climate Change Impacts and Implications programme.
	3.1.C Commission, facilitate or otherwise support region-specific research into climate change impacts and implications where it relates to council roles and functions and where knowledge gaps exist, and make this information widely available		Underway and ongoing	Multiple departments	GWRC has commissioned a number of studies that are publically available.  AECOM 2016 Greenhouse gas inventory for the Wellington region NIWA 2012 Sea-level variability and trends: Wellington Region NIWA 2011 Joint-probability of storm tide and waves on the open coast of Wellington NIWA 2012 Assessing the storm inundation hazard for coastal margins around the Wellington region NIWA 2017 Climate Change and variability in the Wellington region (forthcoming)  Climate change modelling is also incorporated into most flood hazard risk maps which can be accessed via the GWRC Flood Hazard website <a href="http://mapping.gw.govt.nz/GW/Floods/">http://mapping.gw.govt.nz/GW/Floods/</a>
	3.1.D Publicise and celebrate climate change and resilience success stories in the region to inspire positive behaviour change		Underway and ongoing	Communications	Notable media presence includes the Dec 2015 " <a href="#">How sea level rise will affect the Wellington region and possible solutions</a> " article, and the feature about Adaptive Pathways planning in the second 2015 Victorious magazine (Victoria University).

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	3.1.E	Regularly measure and publish up to date information on greenhouse gas emissions in the Wellington region.	Victoria University of Wellington Summer Scholar Research Programme, Worcester Polytechnic (USA) Interactive Qualifying Project	Underway and ongoing	Flood Protection, Public Transport, Environmental Science	In collaboration with other Councils in the region GWRC has commissioned AECOM to produce a regional GHG inventory in 2014. The inventory was updated in 2016, and will be updated again in 2018.
	3.1.F	Develop an online platform to serve as an information repository and a means to connect with others on climate change responses regionally and nationally		Not yet started	Strategic Planning	A climate change section of the GWRC website was established in 2016 and is regularly updated with relevant information. Other initiatives such as the Climate Change Impacts and Implications programme have established websites that serve the purpose of this action with greater efficacy than could be exerted by GWRC.
3.2 Advocate, empower and collaborate	3.2.A	Encourage and support communities and individuals to make their own contributions to combating climate change	competitions, open days, GWRC-led projects, and social support tools	Underway and ongoing	Multiple depts.	Activities of this type span both Mitigation and Adaptation and include: The Regional EV Working Group (see action 1.1.A) Councillor and officer participation in numerous forums in which the need for emissions reductions and adaptation planning are emphasised Multiple submissions in which the need for emissions reductions and adaptation planning are emphasised (including re the updated EECA Strategy and the ETS review)
	3.2.B	Strengthen ties with the insurance sector to help improve the market penetration of natural disaster insurance and realise the potential of insurance pricing and other financial products for risk-awareness, prevention and mitigation and for long-term resilience in infrastructure investment and business decisions		Not yet started	WRS office	Officers are keeping a watching brief and have participated in numerous forums where issues relating to insurance have been discussed.

Policies	Actions 2015-2017		Examples/modes of delivery	Status of Action <i>at Oct 2015</i>	Lead departments	Summary of progress
	3.2.C	Advocate for stronger measures to address climate change drivers and impacts with central government and other relevant parties		Underway and ongoing	ELT, councillors	Advocacy of this type has been expressed in multiple forums, and via submissions in which the need for emissions reductions (including re the updated EECA Strategy and the ETS review) and adaptation planning are emphasised.
	3.2.D	Engage university students in climate change projects through sponsoring student study programmes and internships. Involve schools in climate change projects and explore Enviroschools as a possible mode of delivery.	Sustainable Transport team are working with Enviroschools on a sustainable transport curriculum resource. This is being launched 2017 and will be part of Movin' March 2018.			<ul style="list-style-type: none"> <li>- Officers have lectured as part of the Economics of Disaster undergraduate course at Victoria University</li> <li>- Presentation made to Enviroschools regional coordinators in 2016.</li> <li>- Enviroschools contributed to the climate challenge conference held in Wellington in autumn 2017</li> <li>- In collaboration with the sustainable transport team Enviroschools have drafted a climate change themed active travel resource for schools. To be published in next 6 months</li> <li>- Multiple climate change related actions in schools and early childhood educators registered as Enviroschools.</li> <li>- Enviroschools facilitators providing climate change related resources and guidance in registered Enviroschools.</li> <li>- Strategy group had intended to take on an intern over summer 2016/17 however the shortage of desk space following the Kaikoura earthquake prevented this.</li> <li>- Officers have been interviewed for students Masters' theses related to climate change issues.</li> <li>- GWRC sponsored 4 Worcester Polytechnic Institute students from Massachusetts, USA in 2015 who carried out a study "Investigating flood and Climate Change Perception in the Hutt Valley", in association with the NZ Climate Change Research Institute.</li> <li>- In 2017 GWRC sponsored another research project by Worcester Polytechnic Institute students who carried out a "Community Engagement Evaluation" on the Hutt Valley Riverlink project (which is designed to reduce flood risk and incorporates climate change projections)</li> </ul>
	3.2.E	Work with the community and with stakeholders to facilitate behaviour change.				Highlights in this space include the work progressed by GWRCs Sustainable Transport team (see action 1.2.A & B)

Policies	Actions 2015-2017	Examples/modes of delivery	Status of Action <i>at Oct 2015</i>	Lead departments	Summary of progress
	3.2.F	Take an active leadership role, fostering public debate and awareness through, for example, hosting talk series', symposia, forums and other public events.			Examples of active leadership include: Developing the GWRC Climate Change Strategy and Implementation Plan Organising the 2016 Electric Vehicle symposium and facilitating the Regional EV Working Group. Providing seminars about the results of the 2017 NIWA Climate change and variability Wellington region report (see action 2.3.A).

### Additional actions

Some actions that were not listed in the October 2015 Implementation plan evolved during the period since the strategy was adopted. These primarily relate to electric vehicles and will be included in an update of the Implementation Plan.

Policy most relevant to additional action	Actions 2015-2017	Examples/mod es of delivery		Lead departments	Summary of progress
3.2 Advocate, empower and collaborate	Adtnl 01	Convene a working group consisting of representatives of councils and relevant stakeholders with an interest in electric car infrastructure, to promote the installation of a network of fast charging stations in the Wellington region.	Form a regional working group	Strategic planning	GWRC established a Regional Electric Vehicle Working Group (REV-WG) in 2016 and continues to convene it. REVWG is comprised of officers from councils across the region with participation from central govt. agencies and the private sector. The group operates as a coordinating mechanism for the promotion of electric vehicles (EV) generally, and in relation to the development of charging infrastructure.  REVWG meets quarterly and is open to sector stakeholders and interested parties from throughout NZ. REV-WG activity is summarised in six monthly updates which are published on the GWRC website.



Policy most relevant to additional action	Actions 2015-2017		Examples/mod es of delivery		Lead departments	Summary of progress
1.2 Promote and provide attractive and accessible low emission transport in our own fleet and in future public transport contracts	Adtnl 02	Demonstrate leadership in regard to electric vehicles and reduce emissions from the GWRC corporate vehicle fleet by undertaking to replace existing vehicles with electric vehicles when they are due for replacement.	Change corporate vehicle purchase policy to prioritise electric vehicles		Strategic planning	The GWRC corporate vehicle purchase policy was amended in 2016 and now prioritises the purchase of electric vehicles. A business case must be provided to justify the purchase of a vehicle with an internal combustion engine.