OraTaiao
NZ Climate & Health Council

www.orataiao.org.nz

10 April 2015
Greater Wellington Regional Council

Submission on GWRC's Draft Climate Change Strategy: A Strategy to guide the Wellington Regional Council's climate resilience activities

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OraTaiao: The New Zealand Climate and Health Council includes more than 300 senior doctors and other health professionals across New Zealand advocating climate action for important health and equity gains now – and over the decades ahead.

Thank you for this opportunity for OraTaiao to make a written submission on the Council's Draft Climate Change Strategy. We would also like to make an oral presentation to the Regional Council.

Yours sincerely,

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Executive Summary

OraTaiao welcomes Greater Wellington Regional Council's Climate Change Strategy. We are concerned that the strategy under-emphasises mitigation – reducing emissions of greenhouse gases. There are many sound reasons why rapidly reducing the region's greenhouse gas emissions is the best course for the region's economic and social wellbeing – including future-proofing our region and securing real health gains in the short and longer term.

The challenges for GWRC that need to be addressed in greater detail in the strategy include:

- keeping up with the best and latest evidence concerning science, economics and implementing change
- ensuring the costs and benefits of both emission reduction changes and adaptation are shared fairly globally, within New Zealand and within our region;
- realistically quantifying the higher scale and speed of emissions reductions required and monitoring progress (including improving GWRC's Greenhouse Gas Inventory baseline data);
- managing widespread rapid emission reduction within areas of GWRC's areas of direct responsibility;
- supporting widespread rapid emission reduction within areas in which the GWRC has no direct responsibility but has shared common interests; adjusting objectives, policies and actions to support the necessary scale and speed
- developing new actions after 2017 from GWRC's own experience in rapidly reducing operational emissions, local government best practice (within NZ and internationally), and successful pilots of local programmes
- ensuring the climate strategy drives GWRC decision-making.

1. Introduction

1.1 GWRC's draft Climate Change Strategy is arguably the Council's most important planning document for the region's future. Although we outline changes which OraTaiao believes are essential to making sure the region plays a realistic part in securing our future, we would like to congratulate the vision of the Council in initiating this work and the work of GWRC officials – the draft strategy is clear and concise with valuable messages and directions. OraTaiao would also welcome the chance to talk to GWRC further about the strategy – both presenting formally to the Council and meeting informally with officials.

2. Why does the Wellington region need a climate change strategy?

Securing our economic & social wellbeing

2.1 The Council correctly states that this is more than an environmental issue, climate changes impact on our economy and society. But the impacts are also considerably wider than the strategy's examples of local extreme weather events. Much bigger economic and societal impacts on the Wellington region are likely to result from the economic fall-out and heightened conflicts arising from

a world struggling with extreme weather events, crop failures, water shortages, changes in disease patterns and resource shortages.

2.2 New Zealand is vulnerable to climate changes both here and amongst our trading partners – we are a small open economy heavily dependent on stable environmental and climate conditions and thriving economies able to buy our products. As the home of NZ's capital city with much of the public service employed here, what happens to NZ's economy affects our region's economy and residents. Looking just at the cost of extreme weather events here misses the interconnectedness and wider implications of our changing climate.

Health gains in short and longer term

2.3 Climate change has profound adverse effects on human health, which is widely recognised by a number of renowned authorities in health[1,2,3]. The Lancet, one of world's leading medical journals, calls climate change 'the biggest threat to global health in the 21st century'[4,5] – climate change certainly threatens our economic and societal wellbeing. Conversely, well-designed climate action means better health and wellbeing in the short and longer term, from helping keep us keep active to warming our homes, and significantly reducing taxpayer-funded health care costs.[6,7]

Cheaper to mitigate now

2.4 Internationally recognised economists Lord Nicholas Stern[8] and Ross Garnaut[9] have already established that the cheaper option is to mitigate, adaptation is more expensive and ultimately impossible – there are physical, physiological, societal and economic limits to adaptation. We don't have a choice, we must rapidly reduce emissions as our best chance of securing our region's future.

2. 5 The Council decides significant investment in long-lived infrastructure that potentially locks the region into GHG-intensive pathways which will be costly in the long-term (for example transport infrastructure, public buildings and land use choices). This also makes early action with a long-term view a highly cost-effective option. The World Bank notes: 'Decisions taken today lock in the futures of many cities. The infrastructure of 2050 is being built today, yet the world of 2050 will be very different from today.'[10]

A realistic strategy matters

2.6 The longer we delay emission reductions the harder it will be to adapt – and less likely that we can reduce emissions in time to prevent severe economic and societal impacts. The bottom line is how to implement major emissions reductions soon enough so that it is still possible (albeit challenging and expensive) to adapt to climate changes. There is a 20-30 year time lag from emissions we release into the atmosphere[i,11] – this means the impact of this year's emissions will be experienced by most regional residents alive today. Babies born this year are likely to see the 2100 impact of the infrastructure decisions the Council is making now. In other words, most of us have a direct stake in rapidly reducing emissions – a realistic strategy matters.

[i] Perhaps 60% of global warming from emissions occurs within 25 to 50 years (Hansen et a. Science. 2005). Within their lifetimes, people currently aged in their early 30s and younger – some 45% of New Zealanders – may therefore experience around 2/3rds of adverse climate effects from this year's excess emissions.

3. What's this region's fair share of emissions reductions?

3.1 Although OraTaiao warmly welcomes every step towards protecting our climate, we believe the Council needs to be clearer about the scale and speed of change necessary for our region. This is big.

3.2 To use the analogy of a team training for the popular Wellington Round the Bays fun runs/walks, signing up is a great first step, but the team needs to know the distance they're training for, know their current level of fitness, commit to training targets over the weeks ahead, think about and deal with factors more-or-less beyond their control, look after each other, celebrate successes, and have fun. But this isn't optional, the international climate scientists have told us we have to cover the distance in reducing enough emissions in time.

3.3 The Council has taken the important first step in drafting the Climate Change Strategy – now we need to understand the level of emissions reductions actually needed over the next few years and decades, look after each other, be ready to respond to factors beyond our control, and enjoy the real gains that responsible climate action will create for our region, our economy and our health. The strategy needs realistic numbers, timelines and milestones.

3.4 GWRC's strategy must ensure that the Wellington region plays a fair part in rapidly reducing global emissions. This also means the Wellington region will future-proof businesses and households as a smart, innovative low-emissions economy, and with careful policy design, enable important health co-benefits for everyone.

Emission reduction globally

3.5 The internationally agreed limit is 2'C average global warming. The IPCC's Fifth Assessment Report released in September 2013[12,13] presented a global carbon budget of less than half a trillion tonnes till 2050 for a two-thirds chance of staying within the internationally agreed limit of 2'C global warming. Public safety planning usually involves better odds than two-third.

3.6 Small island states (including our Pacific relatives and neighbours) threatened with eviction by rising sea levels are calling for a limit of 1.5'C average warming. This suggests the preferred global budget is much lower. This also reminds us that what matters is the total quantity of emissions. So the faster we reduce emissions, the better. The global atmosphere has real physical limits for a safe and adaptable climate.

Wellington region and global justice

3.7 One approach to global fairness is the Greenhouse Development Rights framework[14,15,16,17], which aligns with the latest IPCC Fifth Assessment Report[18] and is based on the principle of justice that NZ's climate action should not increase world poverty.

3.8 The GDR Climate Equity Reference calculator (http://climateequityreference.org/calculator/) gives various options to calculate 'fair share' including extent of historic emissions (past culpability) and per capita levels of income (current capability). Choosing a mid-range option that includes a mid-range development threshold of US$7,500, mid-range 50/50 capacity/responsibility options, limiting historic 'polluter-pays' responsibility to 1990 onwards, and choosing a strong 2'C pathway (good odds – i.e. better than two-thirds – that we limit global warming to 2'C and undefined odds of limiting warming to 1.5'C), the GDR allocates for NZ 34.0Mt CO2-equivalents for 2020. The GDR calculator

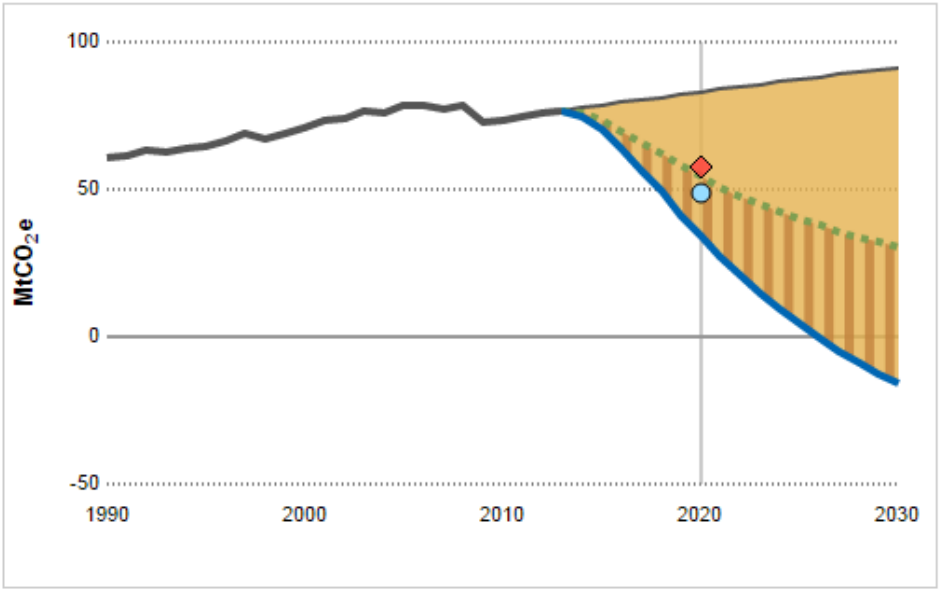
thus updates the previous 2009 GDR-proposed NZ 'fair share' target of 40% reductions on 1990 gross emission levels by 2020[ii,19], to become a 44% reduction on 1990 gross emission levels by 2020[iii] (49% using the latest NZ 1990 emissions figure of 66.7Mt from NZ's 2013 Inventory). This appears to equate to a 58% reduction on NZ's 2013 gross emissions by 2020[iv].

http://climateequityreference.org/calculator/ for New Zealand (at 10 April 2015)

Country/region report in 2020 for New Zealand

Mitigation obligation and pledges

New Zealand baseline emissions, projected to 2020		83 $MtCO_2e$
Global mitigation requirement below baseline, projected to 2020	(A)	19,773 $MtCO_2e$
New Zealand share of global Responsibility Capacity Index in 2015 to 2020 period	(B)	0.25%
New Zealand mitigation obligation, projected to 2020	(A × B)	
as tonnes below baseline		49 $MtCO_2e$
as tonnes per capita		10.2 tCO_2e/cap
as percent below baseline		59%
as per-capita **climate tax** (assuming global mitigation and adaptation costs = 2.0% of global GWP)		$908
New Zealand 1990 emissions		61 $MtCO_2e$
New Zealand emissions allocation, projected to 2020		
as tons		34 $MtCO_2e$
as tonnes per capita		7.1 tCO_2e/cap
as percent of 1990 emissions		56%
as percent below 1990 emissions		44%



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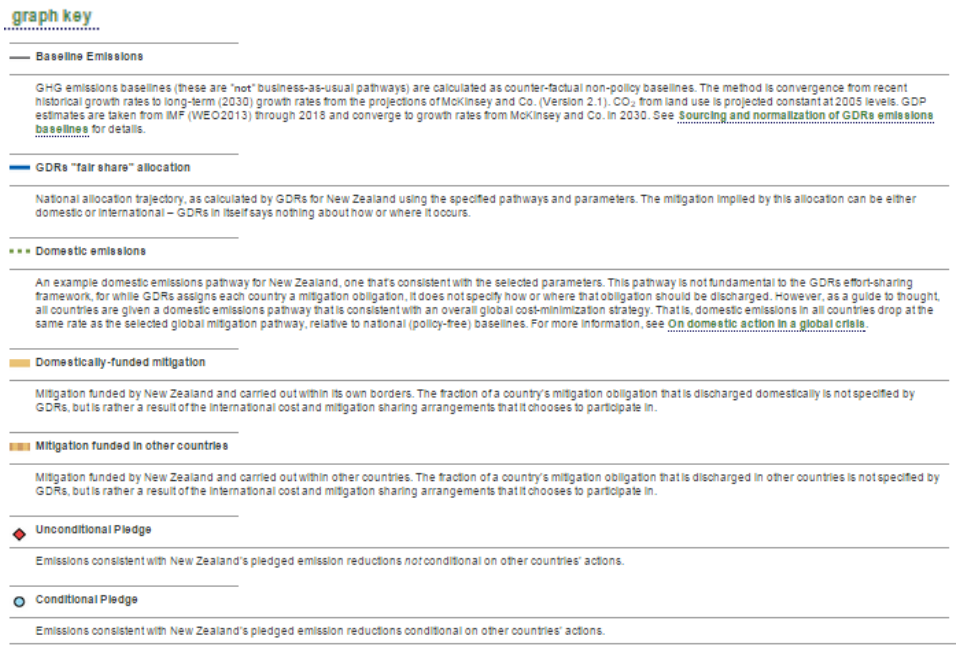
Global mitigation pathway: Strong 2°C pathway	Responsibility weight: 0.5	Development threshold: $7,500
Progressive between thresholds: no	Luxury threshold: $100,000	Mult. on incomes above lux. thresh.: 1.0
Include land-use emissions: no	Include non-CO_2 gases: yes	Include emiss. embodied in trade: no
Cumulative since: 1990	Mitigation cost as % GWP: 1.0%	Adaptation cost as % GWP: 1.0%
Use mitigation smoothing: yes	Kyoto adjustment: none	Emissions elasticity: 1.0

[ii] The 2009 NZ 'Sign On' campaign (which had the support of around quarter of a million New Zealanders within just months prior to the 2009 international climate talks (COP15) in Copenhagen) called for 40% reductions of 1990 gross emissions levels by 2020 which the GDR had calculated as NZ's 'fair share' then. At the time, the 40% target equated to halving NZ's current 2009 gross GHG emissions by 2020 (Metcalfe et al. NZ Med J. 2009).

[iii] Updated NZ actual gross GHG-emissions in 1990 = 66.7Mt CO2-equivalents published 10 April 2015 (NZ Greenhouse Gas Inventory 1990-2013 http://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/ghg-inventory-1990-2013.pdf), GDR 2020 allocation = 34.0Mt (http://climateequityreference.org/calculator/); required reduction 2020 GDR vs 1990 actual = (66.7-34.0)/66.7 = -32.3 ÷ 66.7 = -49%. [Note the GDR uses the NZ Greenhouse Gas Inventory 1990-2012 previous figure of 60.6Mt in 1990, which gives a -44% reduction.]

[iv] NZ actual gross GHG-e 2013 = 81.0Mt CO2e (NZ Greenhouse Gas Inventory 1990-2013), GDR 2020 allocation = 34.0Mt; required reduction 2020 allocation vs 2013 actual = (81.0-34.0)/81.0 = -47 ÷ 81 = -58% (http://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/ghg-inventory-1990-2013.pdf)



3.9 For the Wellington region, this would mean roughly more than halving our region's 2012/13 gross emissions[v] of 3.79Mt CO2-eby 2020 from directly translating the latest 'fair shares' GDR 2020 target for NZ[vi]. However, the Council may wish to plan for a much higher level of emissions reductions by 2020 (and beyond to 2050) than the NZ average. The specialised, urban nature of Wellington means that we should be taking a greater share of emissions reductions both because it is easier for an urban area to do so and because Wellington benefits from rural activity in other regions. Relatively, it is easier to reduce emissions in urban areas compared to rural (for example, enabling most residents' travel either actively or on all-electric urban transport). In addition, Wellington needs to be concerned about the greater difficulty of reducing emissions in more rural regions (and consequently Wellington needs to take a greater share of emission reductions) because of the high interdependence of the Wellington region with the rest of NZ. In particular Wellington's public service, education and health work-force depend on export earnings from other regions to fund our employment. These specialised services in turn create secondary employment in our region.

3.10 To some extent, whether the Council chooses to halve current emissions by 2020 or a higher target, is probably irrelevant in the short term, as in either case, the policy action will be the same. Rapid reduction of gross emissions is needed.

3.11 We have concentrated on gross emissions rather than net, because as the Council's mitigation objective acknowledges, this strategy is also about 'helping create the conditions for a smart, innovative, low-carbon (low-emissions) regional economy'. To create a low emission regional economy we need to focus on ways to reduce gross emissions rather than on ways to continue to emit and then grow trees to absorb those emissions. In some ways, NZ's forestry (which has previously absorbed much of NZ's gross emissions, leading to a much lower net total) has slowed NZ progressing to a 21st century economy with low emissions infrastructure. This is quickly changing as our forests reach the time of harvest and new plantings have slowed over the last seven years or so –

[v] http://www.gw.govt.nz/assets/About-GW-the-region/WellingtonRegionGHGInventoryReportFINALVERSION7April2014.PDF

[vi] This is assuming the Wellington region had a similar rate of increased emissions from 1990 to 2000/01 as NZ, in order to estimate the Wellington region's emissions in 1990.

in 2013 the rate of harvesting doubled new planting. Harvesting is forecast to peak in 2025 when NZ forestry becomes predominantly a source of emissions too, rather than previously a buffer[vii].

3.12 As the Council quotes in the strategy: 'Local governments have to deal with the problem as it's on their doorstep – whether there is global agreement between national governments or not.' Delayed mitigation action in Wellington will contribute to even greater need in Wellington for adaptation action. Delayed mitigation action in NZ with increasing gross emissions since 1990, an Emissions Trading Scheme that has locked in existing high emissions practices, encouraged new coal-powered milk-treatment plants and discouraged forestry planting by a virtually zero price on emissions, and economic expansion based on new fossil fuel extractive industries, has put even greater pressure on local government to act decisively and quickly.

4. Where are we starting from - what's the Wellington Region's real baseline?

4.1 To continue the Round the Bays training analogy, we need to know we're starting from – that is, our region's current levels of emissions.

4.2 OraTaiao congratulates GWRC on commissioning the Greenhouse Gas Inventory report (ref. Appendix 3 of Strategy) to establish both the region's baseline and business-as-usual future trends.

4.3 Unfortunately, the Inventory has two information limitations:

(i) The most important gap is that international aviation & shipping emissions are left out – which for the Wellington region is like Waikato not measuring dairy emissions. Although statements have been made that emissions are decoupling from regional GDP (or better still, hopefully GWRC's GPI) without this data, it's impossible to conclude that. Given the high emissions impact of international travel and the rise in cruise ships and overseas flights, our regional emissions may be increasing substantially, we don't know.

International travel emissions were left out of the original Kyoto international treaty[viii], but because of international aviation and shipping's disproportionately high emissions and role in our regional economy, these need to be estimated and included for our region, even if this is simply halving the arrival and departures statistics to share emissions allocation between Wellington and the overseas destination/departure location.

(ii) The other gap is that inventory measures emissions from 2000/01, not 1990. We understand that data was not easily available for the 1990s and we know that Wellington City Council's Climate Plan is similar. But this later baseline makes it difficult for the Council to quickly compare the inventory's 'High Ambition Emission Reduction Scenario' of 30% reductions by 2020 from 2000/01 levels with targets that use 1990 baselines (for example: GDR's NZ 'fair shares' calculations such as 2009's 40% emissions reduction on

[vii] Regional forestry planting and harvesting plans are critical over the coming decades. Much of NZ's plantation forests are increasingly due for harvest with peak harvesting around 2025 where forests become another source of NZ emissions and abruptly increase NZ's already high per capita emissions even higher to around 90 million tonnes – almost 50% higher than 1990 levels.

[viii] Likewise, international transport emissions do not appear to be included in GDR 'fair shares' framework, but globally for the small proportion of the world's population who can afford to fly, the emissions impact is big.

1990 levels by 2020[16,19] or 2015 mid-range 44%[ix] reduction on 1990 emission levels by 2020[x] – or indeed NZ's unconditional commitment to 5% reduction of emissions from 1990 level by 2020[xi]).

Compared to more than halving 2013 emissions by 2020 (calculated by applying the GDR approach to our estimation of the Wellington region's 1990 gross emissions), the inventory's 'High Ambition Emissions Reduction Scenario'[xii] is not that ambitious or realistic in mitigating NZ's climate risk – and that's not counting international transport emissions, nor whether in fairness, the Wellington region could mitigate more than the NZ average.

5. Making it real

5.1 The relationship with other Council planning and decision-making will be critical to making this strategy real for our region – for example, the Climate Change Strategy needs to drive the region's Land Transport Strategy, not the other way round. Realistically quantifying the higher scale and speed of emissions reductions required, developing associated policies and actions that are quantified with timeline, and monitoring progress, will be essential for a successful and effective Climate Change Strategy.

Vision

5.2 OraTaiao suggests the following Vision wording:
'Greater Wellington Regional Council **leads and** strengthens the long-term resilience of the Wellington region through climate change action and awareness, **sharing change and protecting the most vulnerable**.'

(instead of GWRC's proposed: '*Greater Wellington Regional Council strengthens the long-term resilience of the Wellington region through climate change action and awareness*.')

5.3 This is because both international and NZ analysis tells us that households who are already vulnerable in our region will be disproportionately affected by climate changes – and potentially by climate change responses[4,20]. We must keep equity at the forefront of planning, so that the region's response to climate changes, if anything, improves equity, as well as health.

5.4 'Sharing change' also refers to the conversations we must have as a region about how the impacts of climate changes will be shared – this may ease the retreat, protect and repair decisions we must make (for instance, areas along the Kapiti Coast and Hutt Valley).

Mitigation, adaptation & awareness

[ix] 49% at NZ's latest revised 1990 66.7Mt from NZ's 2013 Greenhouse Gas Inventory released 10 April 2015
[x] http://climateequityreference.org/calculator/
[xi] On the latest NZ Greenhouse Gas Inventory figures released on 10 April 2015 for 2013, NZ 5% conditional reduction commitment on 1990 levels now equates to reducing 2013 gross emissions by 28.5% by 2020. Because of our projected forestry harvesting, net emissions become increasingly irrelevant to the point where around 2020, net emissions equal gross emissions, then net emissions exceed gross emissions through to 2025 or so (from graph presented at COP21 Lima late 2014 by NZ Climate Change Ambassador Jo Tyndall – refer Appendix 1
[xii] http://www.gw.govt.nz/assets/About-GW-the-region/WellingtonRegionGHGInventoryReportFINALVERSION7April2014.PDF

5.5 OraTaiao supports the strategy's objectives of mitigation, adaptation and awareness. However, in light of the huge importance of mitigation discussed above, mitigation needs to be given the strongest emphasis.

5.6 We recommend the following wording changes for each of the objectives:
Mitigation: GWRC **significantly reduces** GHG emissions across all its areas of influence (including its own operations), **quickly** helping create the conditions for a smart, innovative, low-**emissions** regional economy.

(instead of GWRC's proposed: '*GWRC demonstrates a commitment to reducing GHG emissions across all its areas of influence, including its own operations, helping to create the conditions for a smart, innovative, low-carbon regional economy.'*)

5.7 By adding 'significantly reduces' and 'quickly' to this objective, we mean that the size and speed of mitigation is critical. To be useful, this objective must be quantified – that is, accompanied by realistic regional emissions milestones (which include international travel emissions) and are monitored annually, with re-planning 3-5 yearly. Timeframes for milestones could be: 2017, 2020, 2025, 2030 and 2050.

5.8 By 'realistic regional emissions' we mean the scale of reductions that are:
(i) necessary to keep global warming at least below 2'C (and preferably 1.5'C with atmospheric emissions reduced to 350ppm levels)
(ii) generally agreed internationally to be New Zealand's fair share
(iii) within New Zealand, a responsible share for our region – especially given Wellington's likely capacity to reduce more emissions than rural farming-based regions.

5.9 By 'smart, innovative, **low-emissions** regional economy' we suggest an all emissions approach. Although reducing carbon emissions as quickly as possible is important because of carbon dioxide's long life in our atmosphere and methane's greater short-term impact, nitrous oxide has an even stronger impact in the short-term than methane. Although globally, nitrous oxide levels are low, NZ has unusually high levels of nitrous oxide because of our agricultural export base, and even Wellington region's emissions are sizeable from local agriculture.

5.10 **Adaptation:** 'Our region **is resilient** through consistent adaptation planning based on best scientific knowledge, with risks from climate change-related impacts **well-managed and shared fairly**.'

(instead of GWRC's proposed: '*Risks from climate change-related impacts are managed and resilience is increased through consistent adaptation planning based on best scientific knowledge*.')

5.11 These changes are so that the objective is the outcome 'our region **is** resilient' – and will need to be quantified with milestones monitored annually and re-planning as significant new scientific information emerges. 'Shared fairly' also needs to be defined – perhaps at a minimum, vulnerable households will not be worse off, and preferably, equity is improved across the region.

5.12 'Best scientific knowledge' is critical – at the moment, the strategy is using outdated IPCC AR4 information from 2007, when all three AR5 reports have been released within the last two years. Updating data is an urgent priority to complete this 2014/15 year – and to continue to rapidly update as the best scientific knowledge continues to emerge. The Wellington region cannot afford to wait on central government guidance on climate changes, otherwise we are making infrastructure decisions that last for decades on out-of-date information. It would be wise to plan for several adaptation

pathways – including the best case and worst case representative concentration pathway (RCP) scenarios from AR5 reports.

5.13 As an example, 2008 Ministry for the Environment guidance for local government was to plan for at least 0.8m sea-level rises by the end of this century, but councils were expected to treat this as a minimum and use the latest scientific information for their areas. Seven years later, MfE has yet to update this guidance, but 0.8m is not the final word on sea level rises. We understand that the author of the original MfE reports thinks 1.5 metres relative to a 1990 baseline should now be used. With unmitigated warming (the current situation), 90 sea-level experts surveyed from 18 countries expect the likely range to be 70-120 cm by 2100 and two to three meters by the year 2300[xiii].

5.14 **Awareness** 'Regional awareness and understanding of climate change causes, impacts, implications and **necessary action** for our Wellington region, is **widespread**.'

(instead of GWRC's proposed: '*Understanding of the causes of climate change is improved, and community awareness of impacts and implications for the Wellington region is increased*.')

5.15 By 'necessary action' we mean the actions that arise from the mitigation and adaptation objectives. By 'widespread' we mean the vast majority of the region's residents, and within various demographic profiles, that understanding and awareness is shared by the majority.
5.16 Again this needs to be quantified and regularly monitored[xiv]. We suggest milestones rising from perhaps 60% in 2017 to 90% by 2020. We expect within 3-5 years this objective would simply focus on awareness of necessary actions – and action.

5.17 As with the three objectives, the twelve policies need to be expanded, quantified and given timeframes in order to be realistic and able to be monitored annually.

Mitigation Policies

5.18 As discussed earlier, as a rough rule of thumb, the Council's mitigation policies could aim to more than halve emissions across all sources, adjusted according to the relative challenge – for example, more reductions in transport emissions than agriculture.

5.19 Mitigation also has three dimensions: rapidly reducing the Council's own emissions footprint (and using this experience to work with other organisations in the region), helping create regional infrastructure to support low-emissions living – and opposing all infrastructure, initiatives and investments that will lock in high emissions living and risk escalating emissions regionally, nationally and globally.

5.20 With these above points in mind, we suggest mitigation policies (with associated actions) along the following lines:
(1.1) Partner with organisations, community groups and households to rapidly increase the region's renewable energy generation and promote energy efficiency (including property warrant of fitness and energy ratings with rate rebates) so that the region's stationary energy emissions are more than halved by 2020, and emissions neutrality is likely by 2030.
(1.2) Reduce the region's transport emissions by two-thirds by 2020 with 60% of private travel via either health-promoting active transport and/or renewably-powered public transport by 2020, there

[xiii] www.realclimate.org/index.php/archives/2013/11/sea-level-rise-what-the-experts-expect/#sthash.299zFhEH.dpuf
[xiv] This monitoring, plus establishing a 2015 baseline, can be easily arranged through purchasing three questions added to the survey of a reputable polling company. A company that uses cellphone numbers is preferable for better reach amongst low income households and younger residents.

are safe segregated cycle-ways along all main travel routes[xv], a fleet of electric car-share vehicles in every suburb and town, 75% of freight travelling outside of urban areas via rail and coastal shipping by 2020, 90% of business and private vehicles renewably powered by 2025, so transport emissions are reduced by 95% by 2025[xvi].
(1.3) Regional waste steadily decreases with 80% of household, business and industrial waste diverted by 2020, and zero waste by 2025, with revenue saved used to support lower-income households and small businesses.
(1.4) Halve the Council's net emissions across all corporate activities by 2020, with net emissions neutrality by 2025 and divestment from all fossil fuel investments by 2016.
(1.5) Tree planting, ecological restoration, community and household orchards and gardens are supported and coordinated so that all the region's marginal land is forested by 2020, and the region is self-sufficient with more than half of fruit and vegetables grown locally by 2020 with the capability of being 95% self-sufficient in food by 2030 if need be (future adaptation of the fruits and vegetables that can grow in the Wellington region will be incorporated in these actions).
(1.6) Partner with health promotion agencies to reduce meat and dairy intake in the Wellington region.
(1.7) Ninety percent of Council procurement minimises emissions by 2017 and where possible, encourages local businesses – with strong opposition to any trade agreements which restrict Council capacity to favour low-emissions suppliers.
(1.8) Regional transport planning aligns with the strategy's transport mitigation policy (especially major modification of the recently formulated Wellington Regional Land Transport Draft Plan so that the Council clearly opposes all private vehicle emission expansion projects including the Roads of National Significance Basin flyover and multi-lane highway to the airport) and the Council requests that NZTA funding for the region concentrate on rapidly expanding high-capacity renewably-powered public transport and a comprehensive network of safe cycling and walking infrastructure.
(1.8) The Council works in partnership with farming communities to diversify production, farm sustainably to local conditions and future climate changes, future-proof by rapid research spread and reduce agricultural emissions by one-third by 2020 – and modelling best practice for other NZ farming communities and internationally.
(1.9) Partner with businesses, community groups and households so that the 'Warm Up Homes' programme continues and more than half of the region's housing is fully insulated by 2020, and 95% by 2025 (ensuring with careful design that new insulation does not create homes that require more energy to cool as Wellington summers become hotter).
(1.10) Strongly oppose all fossil fuel extraction initiatives in the Wellington region and offshore because of the disastrous impact on global emissions – this includes oil drilling and fracking.

Adaptation Policies

5.21 As well as ensuring policies and actions are based on the most up-to-date reliable information available for sound stewardship of this region, the Council needs to consider wider economic and societal impacts than simply extreme weather events – for example, responding to Pacific and other climate refugees, increasing insurance costs that will disproportionately affect low-income households, considering how much the costs of repair and retreat in flood-prone areas should be borne by those property owners or shared within the region, and economic and employment fluctuations from less stable global markets.

5.22 The rising costs of adaptation will need to be factored into Council financial planning to ensure rapid mitigation is well-supported before adaptation costs start to overwhelm the Council's budget

[xv] Overall, separate cycleways on all major arterial routes and separate cycleways on all other routes where there are intersections, high speeds, or high traffic volumes at peak times.
[xvi] This also means investment in public transport vehicles must be 100% renewably-powered vehicles from now on.

and capacity to raise rates (including reducing less pressing expenditure). Care will need to be taken to ensure that any adaptation planning does not inadvertently conflict with mitigation objectives which must take precedence – for example, increasing roading capacity in the name of resilience when this will increase vehicle numbers and consequently, transport emissions.

5.23 The Council can use the learning and experience from adaptation planning for their own operations, to promote best practice with other organisations. As an example, an early adaptation action by the end of this year, could be ensuring that there are alternative travel plans for all employees in the event of flooding disruption to the rail service – such as planning to at short notice, completely fill Council vehicles to efficiently carry employees dwelling in similar areas to and from work for a week or more if necessary. The Council could encourage other major regional employers to have similar plans before the 2016 winter, thereby reducing the previous traffic deadlocks that have occurred previously when the trains aren't running.

Awareness Policies

5.24 As stated previously, awareness needs to be quantified and monitored regularly, and the Wellington region's Greenhouse Gas Inventory needs to include international transport and be updated at least on a three-yearly basis.

6. Context

6.1 Central government is expected to table New Zealand's Intended Nationally Determined Contribution (INDC) by June this year in preparation for the 2015 United Nations climate change conference (UNFCCC 21st Conference of the Parties (COP21)) in Paris during December to negotiate a global treaty on climate action beyond 2020. The INDC will show how NZ will play its part beyond 2020 in reducing global emissions quickly enough to limit global warming to the internationally agreed limit of 2'C. Details will be available in coming weeks as to the precise timeframe and public consultation process.

6.2 According to central government officials, there are three objectives for NZ's INDC:

(i) credible domestically and internationally
(ii) costs are managed to economy and society
(iii) NZ is guided over the long term to a low emissions future.

Furthermore, the NZ delegation stated during COP20 in Lima late last year that NZ intends to meet our target of reducing our emissions by 5% on 1990 levels by 2020[xvii], and will develop a carbon budget for the period of 2013 to 2020.

6.3 During October this year the IPCCC secretariat will evaluate the total impact of the INDCs tabled by the world's nations to determine whether these will sufficient to limit global warming to the international agreed 2'C limit. Other agencies are also likely to assess the warming impact of the INDCs as nations table these over this year. This means we will have independent evaluation of the adequacy of NZ's INDC to be tabled in June.

[xvii] The delegation noted that NZ's population has already increased by 30% since 1990. But the key to limiting climate changes is the quantity of emissions over time – atmospheric physics is oblivious to the emissions intensity of our economy, population changes, or other factors we are tempted to label as 'exogenous'.

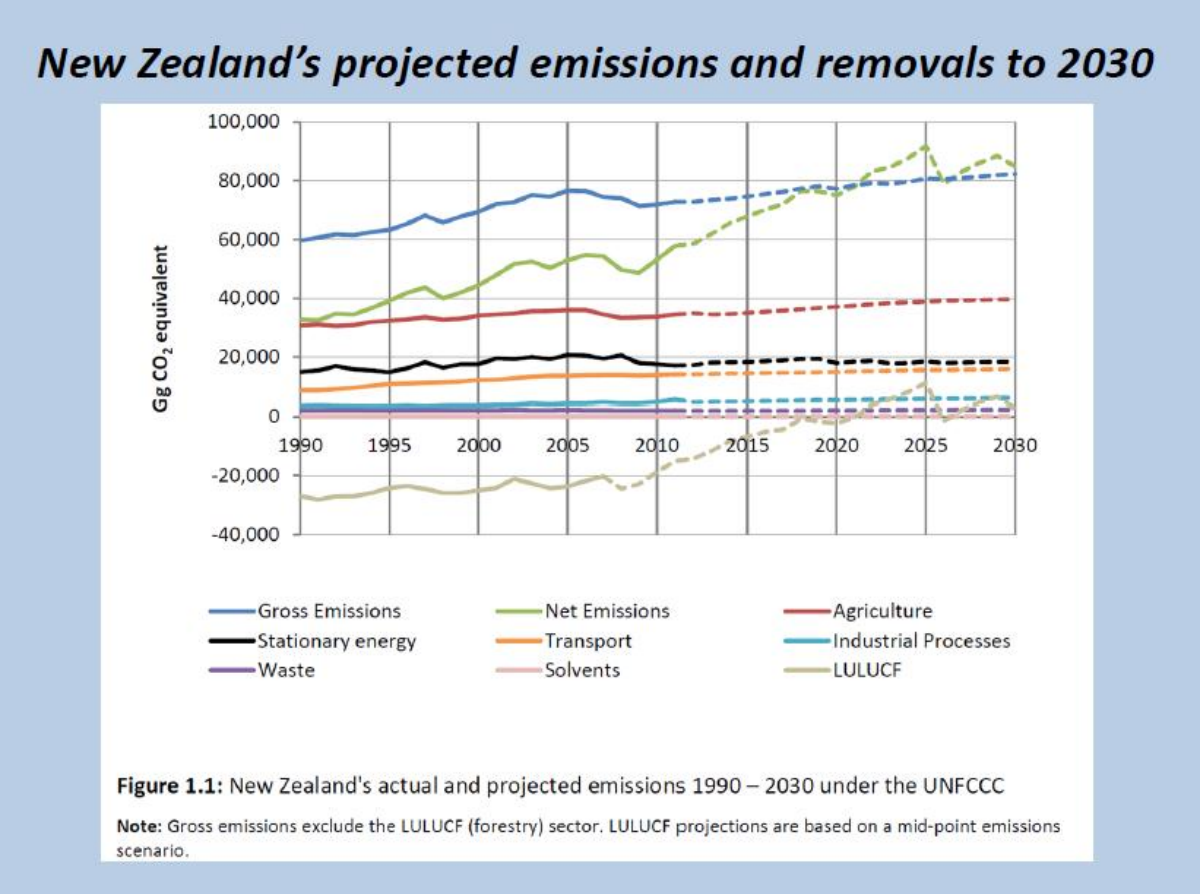
6.4 To repeat these wise words in the strategy: ‘Local governments have to deal with the problem as it’s on their doorstep – whether there is global agreement between national governments or not.’ We don’t know how ambitious NZ’s INDC will be, nor whether COP21 in Paris this December will reach an agreement capable of at least limiting global warming to 2’C in time – although global momentum is building for COP21 to be the breakthrough with significant moves already by both US and China, and INDCs covering half the world’s emissions have already been tabled. What we do know is that the sooner the Wellington region moves to zero net emissions, the better our future will be economically and socially. We also know that a managed transition which shares the changes will be better for our region, than an abrupt lurch to slash emissions because further delays have forced a faster rate of change.

Context of other Councils’ plans

6.5 Internationally, local government has a critical role in ensuring a successful, equitable and timely transition to a low emissions future and adaptable climate changes. Studying international innovations will be important in developing policies and actions for the Wellington region - especially with regions in countries making greater emissions reductions.

Appendix One: Slide 19 NZ's projected emissions and removals to 2030

from NZ Climate Change Ambassador's Presentation at COP20 Lima 2014 http://unfccc6.meta-fusion.com/cop20/events/2014-12-08-10-19-first-working-group-session-of-the-multilateral-assessment-under-the-international-assessment-and-review-process-part-3/new-zealand



Source: Multilateral assessment: New Zealand. NZ Climate Change Ambassador Jo Tyndall presentation to COP20 Lima, December 2014. slide 19.
http://customers.meta-fusion.com/wcm/141201_5020_UNFCCC_COP_20_Lima/download/20141208_1000_03_NZ_multilateral_assessment.pdf

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