



10 May 2018  
Wairarapa Times Age, Wairarapa

Author: Roger Blakeley • Section: General News • Article type : News Item  
Classification : Provincial • Audience : 5,217 • Page: 9 • Printed Size: 162.00cm<sup>2</sup>  
Market: NZ • Country: New Zealand • ASR: NZD 225 • Words: 379 • Item ID: 951338629  
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# GWRC 'plans for the worst but hopes for the best'

ROGER BLAKELEY

Federated Farmers' Jamie Falloon recently claimed that last year's Niwa climate change report, commissioned by Greater Wellington Regional Council [GWRC], is misleading and amounts to crying wolf.

He argues that the GWRC is using the Intergovernmental Panel on Climate Change's (IPCC) high emissions "do nothing" scenario to frighten people into making unfounded decisions on issues such as flood protection and freshwater management.

Mr Falloon needs to look again at GWRC's website, where he will find we've used all four of the IPCC's scenarios to model future impacts on the region.

It's impossible to know which scenario will reflect reality by the end of the century, so we urge consideration of the range of outcomes when planning for climate change.

We share his view that the international community will not sit on its hands in responding to climate change. But we are also working in a world of uncertainty that requires us to plan for the worst and hope for the best.

We take our lead on that from the Environment Ministry, which recently used high emission scenarios to develop guidelines for coastal infrastructure.

The ministry rightly argued that while the present pledges to the Paris agreement may avoid the highest emission scenarios, they are still likely to result in a global temperature rise of between 2.2–3.4 degrees Celsius by 2100.

As well, Antarctic ice melt and the release of more methane into the atmosphere

from permafrost thawing in the northern hemisphere have yet to be factored into the international picture.

The fact is, total concentrations of greenhouse gases will remain very high for a long time, even if global emissions are considerably reduced in the next few decades. This is because greenhouse gases such as carbon dioxide have a life in the atmosphere of hundreds of years.

Our Plan A is to follow the ministry's evidence-based guidance. It is important to use all available information, and it would be irresponsible to dismiss the disastrous outcomes of high emission scenarios based on nothing more than optimism.

On issues such as flood control and sea level rise, future generations will not thank us if we fail to consider the best evidence on climate risk.

- *Councillor Roger Blakeley is chairman of the Greater Wellington Regional Council Working Group on Climate Change.*

## **IPCC Climate change scenarios officially used by GWRC**

### **1. Explanation of scenarios**

RCP8.5 – High emissions scenario

RCP6.0 – Intermediate emissions scenario

RCP4.5 – Intermediate/low emissions scenario

RCP2.6 – Low emissions scenario

### **2. GWRC official online reports and climate change tools**

NIWA climate change report: All mapping done for scenarios RCP8.5 and RCP4.5, complemented by additional uncertainty analysis considering all scenarios (<http://www.gw.govt.nz/assets/Climate-change/Climate-Change-and-Variability-report-Wlgtm-Regn-High-Res-with-Appendix.pdf>)

Interactive climate mapping tool: All scenarios used (<https://mapping1.gw.govt.nz/gw/ClimateChange/>)

Official council tabulated parameters of reference changes per catchment areas: RCP8.5 and RCP4.5 used to provide uncertainty range (<http://www.gw.govt.nz/assets/Climate-change-2/WhaituaClimateChangeprojections.pdf>)

### **3. Specific council departmental use**

Flood Protection: Council-approved allowances for design have based on a 'mid-range' scenario from previous MFE guidance. Currently proposing to use RCP6.0 with sensitivity testing of RCP2.6 and RCP8.5 on the Waiohine floodplain management (subject to council approval)

Water Wairarapa: RCP8.5 for the initial climate change reports, with a justification of the uncertainties involved

All other departments: All RCP scenarios considered, as per interactive climate mapping tool above

### **4. Specific whaitua projects use**

Ruamahanga whaitua: Modelled scenario RCP6.0 (Hydrology report)

All other whaituas: Considering a range between RCP4.5 and RCP8.5, as per council tabulated parameters above

The table below shows the **mean temperature increase range** projected for the Wellington Region, as a function of IPCC emissions scenario and time. The full spatial range can be assessed using the interactive mapping tool, available from GWRC <https://mapping1.gw.govt.nz/gw/ClimateChange/>

<b>IPCC emissions scenario/Mean temp. increase for mid &amp; late century</b>	<b>Mid-Century (2031-2050)</b>	<b>Late-Century (2081-2100)</b>
<b>RCP 2.6</b>	0.5 to 0.8C	0.5 to 0.8C
<b>RCP 4.5</b>	0.5 to 1.0C	1.0 to 1.5C
<b>RCP 6.0</b>	0.5 to 1.0C	1.3 to 2.0C
<b>RCP 8.5</b>	0.8 to 1.0C	2.3 to 3.0C

**Key interpretation:**

1. For mid-century, a warming with upper range of about one degree Celsius is unavoidable, regardless of emission scenario. This is because enough greenhouse gases have already accumulated in the atmosphere to guarantee that the warming will continue unabated during the next few decades, even if the emissions were completely stopped today.
2. For late-century, the additional warming is highly dependent on the emissions scenario.
3. The RCP 2.6 (low emissions scenario leading to carbon neutral) is the only scenario that stabilises the climate, preventing further increases from mid to late century.
4. For all scenarios other than RCP 2.6, the temperatures will continue to increase into the next century.