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Report to Environment Committee
from Rylee Pettersson, Hazard Analyst

Meteorological Hazards and the Potential Impacts of Climate Change in Wellington Region

1. Purpose

To advise the Committee of the findings from the report titled “*Meteorological Hazards and the Potential Impacts of Climate Change in Wellington Region*”.

2. Background

The Committee has received various reports over recent years both on meteorological hazards (such as drought) and on climate change. Examples of such reports are:

- Predicting rainfall droughts in the Wairarapa and the Kapiti Coast using the Southern Oscillation Index (reports 00.518 and 99.395 respectively)
- *A review of climate change, the potential impact of climate change on the Wellington Region and WRC Recommendations* (Report 99.184).

Reports to the Committee on climate change have focused on submissions to central government as part of New Zealand’s response to meeting the International Panel on Climate Change (IPCC) targets for emissions, e.g. *Climate Change, the WRC submission on the Ministry for the Environment’s Domestic Policy Options Statement* (Report 99.188). Officers have also attended workshops that have begun to explore impacts of climate change on New Zealand.

3. The Meteorological Hazards Study

The objective of this study was to:

Assess the risks that meteorological hazards pose to the Wellington Region, and to assess the potential changes to those hazards due to human-induced climate change.

National Institute of Water and Atmospheric Research (NIWA) were commissioned to undertake this study. A copy of their report will be tabled at the Committee meeting, but the executive summary is attached to this report.

The aim of the Meteorological Hazards and the Potential Impacts of Climate Change in the Wellington Region was to get an overview of the various meteorological hazards that exist in the Wellington Region. The meteorological hazards covered were:

- Intense rainfall
- Floods
- Drought
- Landslides
- Tides
- Sea level rise
- Severe wind
- Snow
- Frost
- Extremely high temperature
- Hail and lightning
- Ex-tropical cyclones
- Storminess
- Wildfire

4. **Summary of Findings**

For each of the meteorological hazards noted, climate change is likely to produce greater frequency of more extreme events. Other associated impacts are:

- An increased threat to lifelines and services from more frequent and heavy rainfall events and associated floods;
- Increased drought risk, particularly in the east coast of the Region, affecting some crop suitability;
- Vulnerability of ground waters aquifers to saltwater intrusion as a result of sea level rise;
- Problems for plant and animal pest eradication programmes because of changes in temperature and rainfall regimes; and
- Positive impacts, such as: - favourable climate for sub-tropical and frost-sensitive species, extended growing seasons and higher yields due to higher levels of carbon dioxide.

5. **Communication**

The findings will be presented to the emergency management, planning and consent officers of the territorial authorities and to the Ministry of Civil Defence and Emergency Management. It is also intended that the study will be communicated to others through:

- Presentations and follow up discussions with relevant staff and interested organisations;

- Distribution of written report and digital information to territorial authorities; and
- Creating a Meteorological Hazards Fact Sheet to add to the current educational series that was presented to Committee at the previous meeting.

6. **Recommendation**

It is recommended that the Committee:

- (1) *receives the report; and*
- (2) *notes the contents.*

Report prepared by:

Approved for submission

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Attachment

1. Executive Summary: Meteorological Hazards and the Potential Impacts of Climate Change in Wellington Region