

# **Impacts of Climate Change on Urban Infrastructure & the Built Environment**



**A Toolbox**

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## **Tool 4.9: Adaptation Tools – Linkages to Hazard and Risk Assessment Tools**

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### **Author**

A. Tait

### **Affiliation**

NIWA, Private Bag 14901, Wellington

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## 1. Introduction

Tray 4 of this Toolbox provides a selection of example Tools that may be used to assess climate change adaptation options. These assessment Tools build off analyses of the potential impacts on infrastructure performance and capacity, as described in Tray 2, and analyses of risk as described in Tray 3. The Tools highlighted in the next section demonstrate some of the links from the Tray 4 adaptation assessment Tools back to the hazard and risk assessment Tools in the previous two Trays.

## 2. Linkages to Other Assessment Tools

Table 2.1 outlines the Tools in this Toolbox that can be used to build on a climate change risk assessment, and what information is required before performing such a risk assessment. In particular, the Tools shown here demonstrate various approaches to hazard assessment, identifying adaptation options, and analysing costs and benefits. It is recognised that other approaches are available which can be used to perform functions similar to those described here.

**Table 2.1: Linkage Tools associated with hazard and risk assessment**

Tool Name	Tool Reference	Purpose of the Tool
Council Policy and Plan Auditing Tool	[Tool 1.5]	Provides the basis for undertaking a ‘health-check’ audit of existing planning provisions to take account of climate change effects and to identify gaps and needs for additional planning instruments.
Sensitivity Matrix Prioritisation Tool	[Tool 1.6]	Provides the basis for structured subjective assessment of the vulnerability of an entity (e.g. a Council) to climate change effects across its assets and service responsibilities.
Hazard Bins	[Bins 2.1 to 2.6]	Provide overviews (with worked examples) of key issues, data collection and quality, model choice and complexity, and assumptions associated with assessing climate change impacts on flooding, sea level rise and storm surge, landslides, potable water supply and demand, and other hazards.
Climate change risk assessment good practice	[Tool 3.1]	Provides guidance on quantifying climate change risks, the treatment of uncertainty and how to make judgements about the tolerability of risk, to support decisions about the levels of

		protection that would be considered sufficient and appropriate.
Using RiskScape	[Tool 3.2]	RiskScape is a regional risk and impact assessment tool. Its primary purpose is to provide a framework in which the risk of impact to assets due to various hazards can be calculated.
Case study examples of risk assessments using RiskScape	[Tool 3.3]	This Tool demonstrates how RiskScape can be used to evaluate the impact of future flooding.
Subjective quantified risk assessment tool	[Tool 3.5]	Provides order-of-magnitude estimates of the consequences and risks of defined events which may be used in preliminary evaluations of high-level strategic options for adapting to climate change, amongst other things.