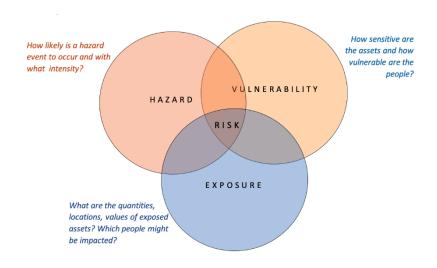# Risk Assessment – An Introduction

> ### [Hazard] Exposure x Vulnerability = **Risk**

"Exposure is whether you are in front of the hazard. Vulnerability is how much it hurts." (ResearchGate 2020)

For the <u>Draft</u> Risk Assessment that follows:

Exposure is derived for each sub-area (see page 1) for different asset classes (buildings, roads, etc.) and hazard scenarios (page 2). It is determined to be 'low', 'moderate', 'high' or 'extreme' based on the quantum of assets affected (page 5 – Exposure rating criteria). *Note* – these classifications can be easily modified if they aren't correct.

Vulnerability = Asset Sensitivity x Adaptive Capacity.

  Asset Sensitivity is assessed based on physical attributes (e.g., building materials, age, etc.) and the condition of the asset; the value and criticality of the asset; and service impacts (e.g., are there alternatives?).

  Adaptive Capacity relates to capacity to accommodate the hazard, ability to adapt or "cope", and willingness to adapt.

In the Draft Risk Assessment vulnerability is only based on 'asset sensitivity' at this stage and is determined to be 'low', 'moderate', 'high' or 'extreme' (page 3).

Risk = Consequence (page 4), i.e., exposure moderated by vulnerability (as per the matrix presented on page 6).

Sub-areas = are based on drainage catchments and, within the Ruawai-Raupo Floodplain, the four key asset clusters.

How likely is a hazard event to occur and with what intensity?

How sensitive are the assets and how vulnerable are the people?

What are the quantities, locations, values of exposed assets? Which people might be impacted?