

# Reavers Lane & Brewery Creek Debris Flow & Rockfall Loss Modelling

## Using RiskScape to model losses...

RiskScape is a tool that can estimate the **LOSS** or **DAMAGE** from past or future events. Using **SCIENCE** developed from previous events in New Zealand and internationally, RiskScape calculates these estimates using information about the **HAZARD** and impacted **BUILDINGS** (Figure 1).

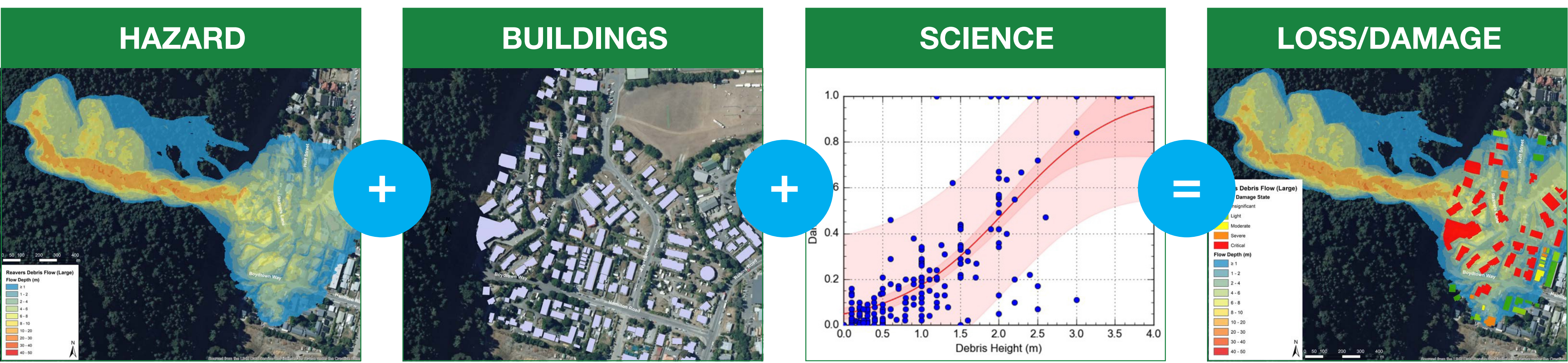


Figure 1: RiskScape risk-model workflow.

## What losses might we expect if an event happened today?

GNS Science used RiskScape to estimate the potential losses and damage from three different sized debris flow events at the Reavers Lane and Brewery Creek study areas. Figure 2 shows the estimated building damage, from destroyed buildings to insignificant damage, for each of the scenarios.

Based on the reinstatement cost of the buildings, RiskScape then used this damage information to estimate the direct financial loss across each study area. Table 1 shows the total estimated losses for each of the debris flow events based on today's building stock in each study area.

RiskScape was also used to estimate the potential maximum financial building loss from any rockfall that could impact the study area. Table 1 below includes the maximum rockfall losses modelled.

Table 1: Estimated direct financial building losses for each sized debris flow and rockfall events.

Event	Brewery Creek	Reavers Lane
Small debris flow	\$1.1m	\$13.5m
Moderate debris flow	\$11.1m	\$17.1m
Large debris flow	\$14.1m	\$39.2m
Rockfall	\$0.7m	\$11.8m

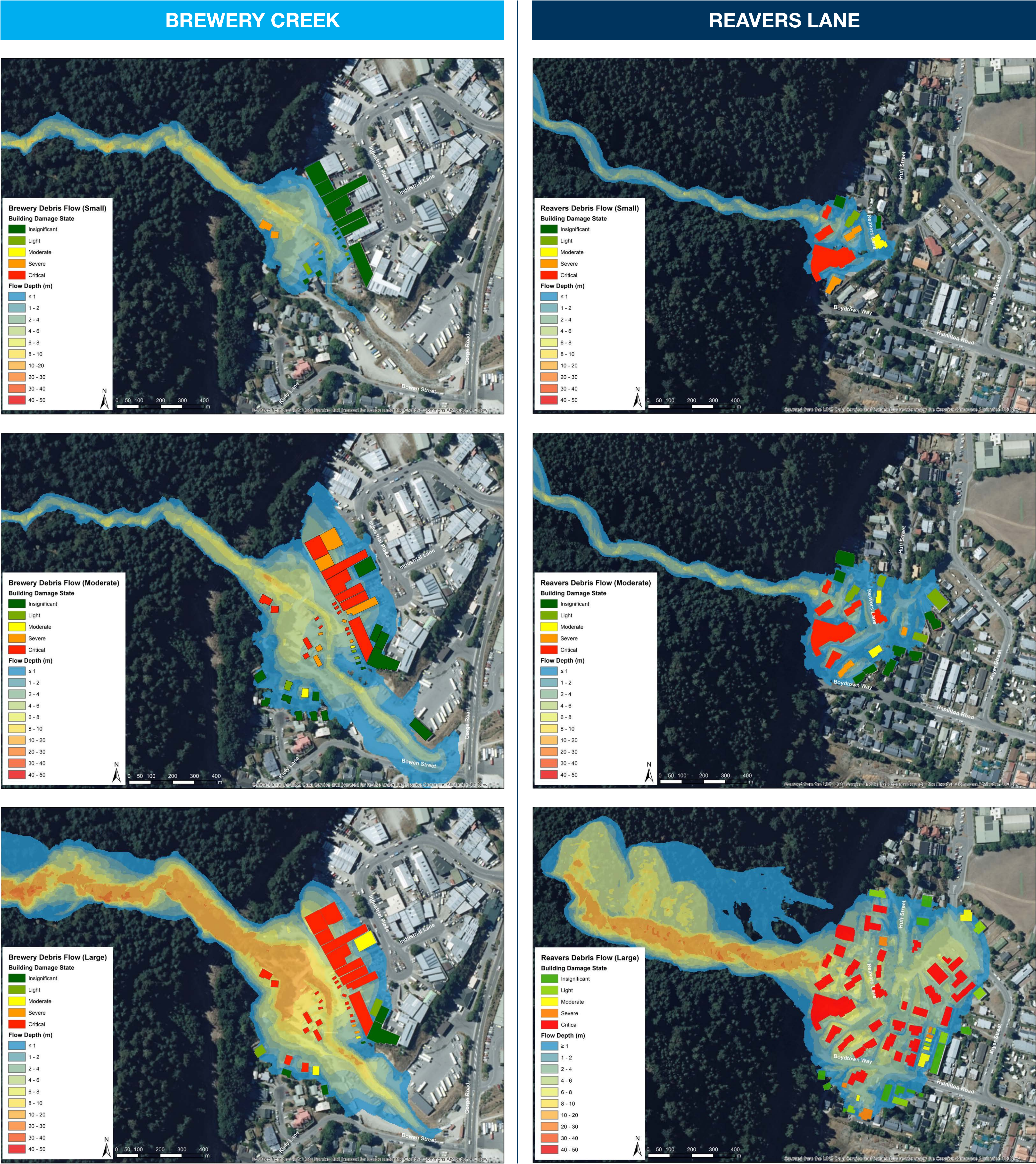


Figure 2: RiskScape damage state results for all modelled scenarios at the study areas.