

# GUIDELINE FOR LANDSLIDE SUSCEPTIBILITY, HAZARD AND RISK ZONING

- **Vulnerability.** The degree of loss to a given element or set of elements within the area affected by the landslide hazard. It is expressed on a scale of 0 (no loss) to 1 (total loss). For property, the loss will be the value of the damage relative to the value of the property; for persons, it will be the probability that a particular life (the element at risk) will be lost, given the person(s) is (are) affected by the landslide.
- **Zoning.** The division of land into homogeneous areas or domains and their ranking according to degrees of actual or potential landslide susceptibility, hazard or risk.

In this guideline use of the word 'landslide' implies both existing (or known landslides) and potential landslides which a practitioner might reasonably predict based on the relevant geology, geometry and slope forming processes. Such potential landslides may be of varying likelihood of occurrence.

The term landslip is sometimes used to describe landslides but is not the recommended term.

It is noted that the term "zoning" has particular application by planners in Australia. This document uses the term as it best describes the process and is used internationally. To avoid confusion, those preparing landslide zoning using this document should always refer to "landslide susceptibility zoning", "landslide hazard zoning" and "landslide risk zoning".

## 2.2 LANDSLIDE CLASSIFICATION AND TERMINOLOGY

It is important that those carrying out landslide mapping use consistent terminology to classify and describe the landslides. It is recommended that the classifications of Cruden and Varnes (1996), Varnes (1978) or Hutchinson (1988) and terminology described in IAEG (1990) be used. These are reproduced in AGS (2007c).

## 3 LANDSLIDE RISK MANAGEMENT FRAMEWORK

Since the publication of AGS (2000), many local government authorities have required a quantitative risk assessment approach for assessment of life loss risk for individual building developments. They have generally accepted qualitative or semi-quantitative assessment of property risk. These assessments are carried out using the risk based framework described in AGS (2000) and AGS (2002).

Figure 1 summarizes the framework for landslide risk management. This is taken from Fell *et al.* (2005) and represents a framework widely used internationally. It was the basis for the State of the Art papers and invited papers at the International Conference on Landslide Risk Management held on Vancouver in May 2005 and is consistent with AGS (2000), AGS (2002) and AGS (2007c).

It is recommended that this general framework be used for landslide susceptibility, hazard and risk zoning whether a quantitative or qualitative approach is being taken.