considered appropriate to develop updated guidelines and commentary for the use of both regulators and practitioners. In particular, the Practice Note should provide a reference document for legislative purposes. The Practice Note was initially developed as an update of AGS (2000). However, during development it became clear that it would be unworkable to merely update parts of AGS (2000) and leave other parts unaltered. Therefore, the Practice Note supersedes AGS (2000). Consequently, it is anticipated that legislation will refer to and/or be based on the Practice Note.

The Practice Note has been formulated to be prescriptive in content. This has the advantage to the regulator that the scope of LRM reports is better defined and to the practitioner that, in general, the required quality of LRM reports is known. Some practitioners perceive that prescriptive requirements will stifle innovation and ingenuity. The Working Group considers that innovation and ingenuity are an essential part of applying the principles given in the Practice Note. The important message is to document the LRM assessment process including definition of terminology used.

The Practice Note has specifically excluded detailed consideration of roads and railways (or similar). The state–of-the-art paper by Picarelli *et al.* (2005) provides detailed advice on how these should be considered for LRM.

C1.4 CONVENTIONS USED

The Practice Note has been kept to a format similar to that adopted in the ANCOLD (2003). The paragraphs in bold type represent recommendations from AGS. This Commentary has section numbers that correspond directly to those used in the Practice Note.

Further discussion of the issues and considerations relevant to the guidance given in the Practice Note are provided in this Commentary where appropriate. The Commentary may also provide comment on whether the relevant practice is well accepted by experienced practitioners or under discussion with contending points of view.

Throughout the Practice Note and this Commentary, reference to "landslide" includes both existing (or known landslides) and potential landslides, which a practitioner might reasonably predict based on the relevant geometry, geology and slope forming processes and experience.

C1.5 STAKEHOLDERS

No additional comment.

C2 RISK TERMINOLOGY

The technical jargon associated with risk terminology can be confusing initially to the lay person or inexperienced practitioner. However, it is necessary to use such terminology to convey succinct ideas or facts. The main terms can be expressed in simple plain English terms as follows:

What might happen?	What are the landslide types?
How big might they be?	What are the landslide characteristics?
How often do they occur?	What is the Frequency (LIKELIHOOD)?
What damage or injury might result?	What are the CONSEQUENCES?
How important is it?	What is the RISK?
What can be done about it?	What are the RISK TREATMENT options?
Has everyone understood the above?	Has the treatment plan been properly communicated?

A generalised discussion of terminology and concepts is given in "HB 436:2004 Risk Management Guidelines, Companion to AS/NZS 4360:2004" (Standards Australia 2004). The principles of AS/NZS 4360 have been embodied in the Practice Note. However, the terminology has evolved for LRM and Practice Note Appendix A presents the current internationally agreed terminology for landslides.

Usage of the terminology since AGS (2000) was published has shown that the term "hazard" has frequently been used incorrectly to encompass the landslide characteristics but not the likelihood of occurrence (frequency). The definition of hazard in AGS (2000) and in the Practice Note includes the likelihood of the landslide and is consistent with the internationally adopted definition.

The flow chart in Figure 1 of the Practice Note demonstrates how the various terms interrelate. This flowchart is similar to Figure 1 in AGS (2000) but is in a simplified form. Also the Practice Note Figure 1 correctly shows the relationship for Hazard Analysis, which must include the frequency analysis as a result of the formal definition. Landslide Characterisation was previously inferred, incorrectly, to be the Hazard Identification.

The practitioner must be careful to use the terms given in Appendix A of the Practice Note consistently and correctly in relation to their defined meaning. Rigour in their use reduces possible misunderstanding. In this context, it is noted that

frequently the public, the media and published papers colloquially use "risk" when they really mean frequency or probability (likelihood).

Further, the Practitioner should be aware that the literature may be confusing as terms used may not be defined or may have changed their meaning with time.

PART B GUIDELINES FOR REGULATORS

C3 GUIDELINES FOR REGULATORS

C3.1 BACKGROUND

The regulator is the regulatory authority (at Federal Government / State Government / Instrumentality / Regional / Local Authority or Council level) having statutory responsibility for community activities, community safety and development approval or management of development within its defined area / region. (Practice Note, Appendix A).

Where landsliding is a possible threat to development, either planned or existing, then the regulator has a duty of care, if not a statutory requirement, to consider LRM as part of its planning process. The companion AGS Guidelines for Landslide Susceptibility, Hazard and Risk Zoning for Land Use Planning (AGS 2007a) provides detailed guidance in relation to this aspect.

The results of zoning studies will be considered by the regulator and implemented as appropriate controls and regulations to cover approvals for subsequent specific development applications.

It is not the intention of the Practice Note and Commentary to provide regulators with all the detail required for establishment and administering of a planning or control scheme, due to the possible variations from state to state and local considerations. It is, however, expected that the LRM principles will be appropriately considered and implemented.

C3.2 RELEVANCE TO APPROVAL PROCESS

Once planning controls are in place and general constraints are established (based on studies in accordance with AGS 2007a), then, where required by the planning controls, each individual development proposal will require specific consideration by the regulator. The planning controls may require a LRM assessment as part of the proposal application documentation for consideration as part of an approvals process. If so, the LRM assessment will need to consider the specific development proposals in relation to the geotechnical model for the site and its surrounding area to determine appropriate risk reduction and maintenance strategies. The extent of the surrounding area considered must be sufficient to identify those landslides that may impact on or be impacted by the site.

The requirement for an LRM assessment may still be imposed by the regulator where landslide risk is identified as an issue even if there are no broad planning studies to initiate it. The basis for such implementation may be local knowledge and experience or the nature of the proposed development.

The regulator will consider the LRM assessment submission together with other application documentation and will determine whether (having regard to the outcomes of the LRM assessment) the development should proceed and if any consent conditions should be applied to the proposal. Risk control measures will form an essential and integral component of the conditions. The regulator will take into account the subsequent process of documentation and inspection during detailed design and construction. Often these subsequent phases are not under the direct control of the regulator and this lack of control must be reflected in the consent conditions.

Where appropriate, the regulator may engage its own practitioner to provide independent advice on LRM reports submitted before any decision on the use and/or development proposal is finalised and consent conditions are stipulated. Alternatively, the regulator could employ its own practitioner for "in-house review" or require submission of a "peer review" report in addition to the LRM report.

Clients and builders must be aware of the implications of consent conditions in relation to the requirements for inspections, testing and confirmation during construction. The required inspections and testing should be carried out during construction, so that compliance with consent conditions can be demonstrated. Without this inspection and testing, compliance can be very difficult and/or costly, if not impossible, to achieve. This predicament can be problematic for the client and may also cause the practitioner difficulties and unwarranted liability exposure. In accordance with good practice, the practitioner can not approve or "certify" work completed if it was not inspected by the practitioner in accordance with consent conditions, unless additional investigations have been completed to satisfy the practitioner as to the extent and quality of the work completed. The regulator should not give the final completion