Questions and Answers - Landslip / Landslide

Purpose

This Q&A sheet gives answers to frequently asked questions about landslips in Tasmania. There is an accompanying fact sheet <insert link> which gives further detail on planning and building controls for landslip.

1 What is a landslip?

A landslip is a natural event involving the downslope movement of a mass of rock, earth, soil, or debris (mix of rock, soil, and other material).

2 Are they called anything else?

A landslip also called a landslide, includes diverse types of movement, such as rock falls and debris flows. In Tasmania, the terms landslip and landslide are used interchangeably.

In planning and building control systems, landslips are preferred due to the legacy of the regulation, as shown in the *Mineral Resources and Development Act 1995* and the *Building Act 2016*.

3 When is a landslip hazardous?

Landslip becomes a hazard when it interacts with land use and development. The land use planning system and building controls aim to manage the risks that may arise from new uses or development.

4 What causes a landslip?

A landslip typically requires the presence of susceptible land and at least one of the following:

- A triggering event such as a rainfall event or earthquake
- A contributing condition that reduces stability, such as a slope undercutting by water, or rising groundwater
- A development or management activity that has destabilised the land

There are many ways a development and management activities can destabilise land, including:

- unretained cuts and fills
- tree removal
- adding too much weight to the top of a slope
- an increase in the water table from a concentration of runoff or stormwater
- inappropriate onsite wastewater treatment
- leaking service pipes or storage containers
- unlined dams.

5 What types of landslips are common Tasmania?

The four most common types of landslides in Tasmania are earth slides, soil creep, rockfall, and debris flow. Other types including rock topples, deep-seated rock slides, and debris slides may occur in specific locations.

6 Where do landslips occur in Tasmania?

Landslides can occur in almost any region of Tasmania because of the state's mostly hilly to mountainous terrain. Flat sites cannot produce landslides. Gentle slopes can, depending on what they are made from. Landslips are most likely to occur in some particular settings, including:

- steep mountain slopes
- weak sediments in coastal areas, and
- where geology produces springs.

To find out more about the mapping of different landslides, Mineral Resources Tasmania (MRT) gives an overview of its mapping program.

7 How do I find out if my land is vulnerable to landslide hazards?

The Tasmanian Government uses the Risk Ready platform on the TasAlert website to provide property-specific hazard reports. TasALert is able to provide information on bushfires, coastal inundation, coastal erosion, and landslip, while riverine flooding is expected to be available towards the end of 2024.

You can type your address into the search function and receive a report on known natural hazards for your land.

8 What are the landslip hazard bands?

The landslip hazard bands divide the slopes of Tasmania into five categories that represent the different levels of intervention through the planning and building systems required to reduce the impact of landslides on new development.

The landslip hazard bands are adapted from Mineral Resources Tasmania's (MRT) research and mapping program for planning and building control purposes and considers geology, geomorphology, susceptibility modelling at various scales, and the MRT landslip inventory.

Table 1 summarises the hazard bands in the Landslip Hazard Code.

Hazard band	Description
High	The area known as active landslips that have been declared as Landslip A areas under the MRDA 1995.
Medium active	The area has known recently or currently active landslips
Medium	known inactive landslip features, or is within a landslip susceptible zone, or has legislated controls (landslip B) to limit disturbance to adjacent unstable areas
Low	no known landslips; but susceptibility warrants specific controls
Acceptable	No known landslips in this area Specific controls beyond the normal planning and building controls are not required. This area is not included in the mapped overlay for the code

9 What is a Declared Landslip A and B area?

MRT declares Landslip A and B Areas under the *Mineral Resources Development Act 1995 (MRDA 1995)*. The declared Landslip Areas were designed to restrict building and other activities on unstable land through legislation in the *Building Act 2016* and preceding Acts. In these declared areas the Minister for Building Control was often required to approve any works on the site. The declared landslips A and B areas have been incorporated into the Landslip Hazard Planning Bands, with the endorsement of works being devolved to the Planning Authority or General Manager of a Council.

Although there are almost 10,000 known landslips in Tasmania, there are only ten declared areas, which is a tiny fraction of the land that may be considered unstable for the purpose of planning and building controls. The declared areas include:

- Beach Road – Legana
- Hone Road – Rosetta
- Beauty Point
- Lowana Road – Strahan
- Boat Harbour
- Panorama Heights - East Devonport
- Casuarina Crescent - Berriedale
- Parnella - St Helens
- Freshwater Point – Legana
- Windermere

The Declared Landslip A and B areas are shown on the land titles held in the Central Plan Register of the Department of Natural Resources and Environment Tasmania.

10 Does having a landslip hazard planning band on my property mean there will be a landslip?

Land within the Acceptable landslip hazard planning band does not require additional regulation beyond normal processes.

The Low and Medium landslip hazard planning bands does not mean a landslip has or will occur. They indicate that the land is susceptible to a landslip, if future development is undertaken without consideration of a landslip, and a triggering event occurs.

A Medium-Active or High landslip hazard planning band indicates that a landslip has been active since European settlement and will require management. In both cases, a Landslip Hazard Report undertaken by a suitably qualified geotechnical practitioner will consider:

1. how the proposed use, development, or works can achieve and maintain a tolerable level (see questions 18) of risk from landslip and,
2. that the development or works will not cause or contribute to a landslip on the site or an adjacent site.

11 Who developed the landslip hazard planning bands?

The Department of Premier and Cabinet led the development of the landslip hazard planning bands through a jointly funded project between the Commonwealth Government and the Tasmanian

Government. The project ran from 2011 through to 2016 and was led by the Department of Premier and Cabinet, with local government, MRT, State agencies, and industry bodies.

The project was undertaken to improve the mitigation of natural hazards through the coordination hazard science, land use planning and building systems, and reduce the risk of natural hazards present to the Tasmanian Community. The project considered Landslips, Coastal Inundation, and Coastal Erosion, with the Tasmania Fire Service and the State Emergency Service implementing the project's outcomes for fire and riverine flooding.

12 How are landslips managed in Tasmania?

Tasmania coordinates the regulation of landslip areas between the planning system (Tasmanian Planning Commission, State Planning Office, Local Planning Authorities) and the building system (Consumer, Building and Occupational Services, Building Surveyors, and Municipal Councils). Agencies such as Mineral Resocurses Tasmanians support the regulation of landslides through its geoscientific hazard mapping program.

The Landslip Fact Sheet <insert link> outlines how the controls in the two systems work together.

13 What is MRT's role in the management of landslip?

MRT is the lead scientific advisory agency in Tasmania for landslip and geohazards. MRT's role includes:

- regional mapping
- maintaining of the state's landslide inventory
- administering declared Landslip Areas under the *Mineral Resources Development Act 1995*, and
- monitoring of a small number of 'problematic' landslides.

MRT also provides technical support through advisory materials on how the Australian Geomechanics Society *Guidelines for Landslide Risk Management* can be applied in Tasmania. MRT does not provide peer review or landslip management services.

14 What is the role of the planning system?

The planning system controls which uses and developments are permitted.

Tasmania's Resource Management and Planning System (RMPS) has an overall goal to promote sustainable development. This includes a '…planning framework which fully considers the land capability.' (LUPAA 1993,Schedule 1, Part 2 (i))

This is achieved through the Landslip Hazard Code in the State Planning Provisions (SPPs) (insert link to SPPs on new website). This code contains provisions that control use and development within hazard bands. Hazard bands are a mapping feature that show how much regulation is needed to manage the risk from landslip hazards to new use, development, and building works in a particular location.

The Local Provisions Schedule maps (LPS) show the Landslip Hazard Planning Bands, which trigger the coordinated regulation of use, development, and building works. There is more information on hazard bands below.

You can find your LPS by visiting the Tasmanian Planning Commission website or contact your local council directly.

15 What is the role of the building system?

Once the land use and/or development have been approved, the building system guides the construction of buildings, and their safety.

The *Building Act 2016* and *Building Regulations 2016* provide for the regulation of Landslip A and B areas declared under the *Mineral Resources and Development Act 1995*. The Act and Regulations enable both the National Construction Code in Tasmania and require that specific issues, including natural hazard regulations, are coordinated with the planning system through the use of Director's Determinations.

Director's Determination Landslip Hazard Areas sets out the requirements that the Building Surveyor and Building Authority must consider as part of a building approval process. The purpose of the controls is to ensure that the building and associated works will not fail due to a landslip, cause or contribute to landslip occurring.

The building and plumbing requirements can be accessed through www.planbuild.tas.gov.au, or through your local council.

16 Does the assessment differ between the planning and building approvals?

The Landslip Hazard Report undertaken in either the planning or building system use the AGS guidelines and MRT guidance in the preparation of the landslide hazard report. In planning, the focus is on ensuring the use or form of development can achieve a tolerable risk, while in building, the focus is on the building achieving a tolerable risk.

An overview of the planning and building requirements are set out in the fact sheet.

17 What is a Landslip Hazard Report?

A Landslip Hazard Report is required in both the State Planning Provisions and the Directors' Determination for Landslip. The Landslip Hazard Report must be prepared by a suitably qualified geotechnical practitioner and demonstrate:

1. how the proposed use, development, or works can achieve and maintain a tolerable level of risk from landslip and,
2. that the development or works will not cause or contribute to a landslip on the site or adjacent site.

Mineral Resources Tasmania has developed guidance to support the writing of the Landslip Hazard Report with the Building for Landslide: Guidance for Geotechnical Reporting in Tasmania (2016)[1]

[1] This guidance is derived from the 2007 Guidelines published by the Australian Geomechanics Society, including:

- Australian Geomechanics Society, 2007a "Guideline for landslide susceptibility, hazard and risk zoning for land use planning", Australian Geomechanics 42(1): 13-36.
- Australian Geomechanics Society, 2007b "Commentary on guideline for landslide susceptibility, hazard and risk zoning for land use planning" Australian Geomechanics 42(1): 37-62.

18 What is a tolerable level of risk from landslip?

Tolerable risk in the planning and building systems means that strategies have been put in place as part of the design and construction for a Use, Development or Works that lower the risk of a landslip occurring because of the of the Use, Development or Works.

In this context of Use, Development, and Works should demonstrate that they will not cause or contribute to a landslip occurring by ensuring:

- that the land is not destabilised through unretained cuts and fills on the slope, removal of large trees, or the adding of too much weight to the top of a slope,
- that the water table is not increased due to the concentration of runoff or stormwater, onsite wastewater treatment, broken service pipes, leaking water (or liquid) storage, of the removal of large trees, the presence of dams or water storage,

At the site-specific level, the Australian Geomechanics Society (AGS) Landslide Management Framework 2007 has been adopted. This framework provides guidance on the characterisation and description of landslide hazard and risk, including the following thresholds for the risk to life :

1. Existing slope/ existing development 10^{-4}/ annum (equivalent to a likelihood of death of 1 in 1,000 years)
2. New constructed slope/ new development/ existing landslide 10^{-5}/ annum (equivalent to a likelihood of death of 1 in 10,000 years)

19 Who are Suitably Qualified Geotechnical Practitioners?

The State Planning Provisions and Directors Determination allow for a practitioner who is:

a) a person holding a building services license issued under the Occupational Licensing Act 2005 in the class of engineer-civil;
b) a geotechnical engineer licenced as an engineer - civil acting within their area of competence or
c) an engineering geologist acting within their area of competence.

The requirements for the above are set out by Consumer, Building and Occupational Services (CBOS) in their determination for the Occupational Licensing (Building Services Work) Determination. The determination considers a Suitably Qualified Geotechnical practitioner to be an Engineer - (Civil, Structural, Geotechnical, Environmental Engineering) who is able to undertake unrestricted civil engineering design within the individual's area of competence. Details of the requirements are set out in the directors determination.

https://www.cbos.tas.gov.au/__data/assets/pdf_file/0004/644503/Occupational-Licensing-Building-Services-Work-Determination.PDF

20 What can I do to reduce the risk of a landslip occurring on my property?

The Australian Geomechanics Society (AGS) recommends that a landowner get the advice of a geotechnical practitioner about what to do to manage the risk from landslides.

The AGS has also developed the *The Australian Geoguides for Slope Management and Maintenance* as generic background information on how you can manage your slope to reduce the risk of a landslip occurring.

21 Can I buy insurance for landslip?

The Tasmanian Governments Insurance Checkup tools (https://alert.tas.gov.au/get-ready/insurance-checkup/) will give you an overview of insurance for natural disasters.

While insurance companies do not (as a general rule) offer insurance for landslip, you should always check with your insurance company to see if they offer landslip insurance.

22 Do the significant works provisions in the landslide code apply in the approval preparation of the Forest Practices Plan?

Forestry operations are exempt from consideration in the planning system with the Land Use Planning Approvals Act s11(3) saying:

> (3) Nothing in a planning scheme or the Tasmanian Planning Scheme affects –
>
> (a) forestry operations conducted on land declared as a private timber reserve under the Forest Practices Act 1985 ; or
>
> Under s11(1):
>
> *forestry operations* includes the processes and works connected with –
>
> (a) the establishment of forests; and
>
> (b) the growing of timber; and
>
> (c) the harvesting of timber; and
>
> (d) land clearing, land preparation, burning off, road construction, and associated quarry works, conducted in relation to an activity specified in paragraph (a) , (b) or (c) ;

23 More information

More information on landslips can be found at:

- Resilience and Recovery, Department of Premier and Cabinet has information about the Mitigation of natural hazards through land use planning project.
- Mineral Resources Tasmania (MRT) has a wide range of information on their website including
    - General information about landslips
    - Declared landslip areas
    - Updated mapping

- The Australian Geomechanics Society (AGS) is the peak professional body in Australia for landslip and geomechanics. In 2007 the AGS developed Landslide Risk Management Guidelines for Australia, which is the technical basis for the assessment of landslip risk.
- PlanBuild is the government's online portal and includes information about hazards.
- The State Emergency Service has information about how to recognise a landslide.
- Review of the landslide planning map

  https://planningreform.tas.gov.au/updates/review-of-the-landslide-planning-map-hazard-bands