Government of South Australia
Department for Housing and Urban Development

Frequently Asked Questions

Draft State-Wide Flood Hazard Code Amendment: Proposed Key Terms

Learn about the key planning and flood related terms that are proposed in the draft State-Wide Flood Hazard Code Amendment.

Q – What does flood risk mean?

A – Flood risk is the potential risk of flooding to people, their social setting (i.e. socioeconomics, household composition, access to housing or transportation) and their built and natural environment.[1]

It is a combination of the chance of a flood occurring and the consequences for people, property and infrastructure. The consequences depend on the community's exposure and vulnerability to the flood impacts.

The level of risk depends on how likely a flood event is to occur and the impact that the flood event would have on the community.

Q – What is considered tolerable and intolerable flood risk?

A – In relation to a flood hazard overlay, flood risk varies from tolerable flood risk, where actions can be taken to mitigate the impacts of flooding, to intolerable flood risk where actions would be required to avoid or reduce the risk.

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[1] As defined by *The Australian Institute for Disaster Resilience Handbook 7: Managing the Floodplain: A Guide to Best Practice in Flood Risk Management in Australia* (AIDR 2017)

Q – What does flood hazard mean?

A – Flood hazard means the potential loss of life, injury and economic loss caused by future flood events.[2]

The level of flood hazard relates to how severe the flood event may be. This can be affected by flood depth, velocity and extent, as well as factors like topography.

Q – What is the difference between flood hazard and flood risk?

A – A flood hazard exists whether or not it poses a risk of impacting people.

Flood hazard is based on flood behaviour, such as flood depth or velocity, and flood risk considers what would be lost or damaged, such as a home or hospital.

The image below provides an example showing the same flood hazard but the risk changes depending on the land use exposed to the hazard.

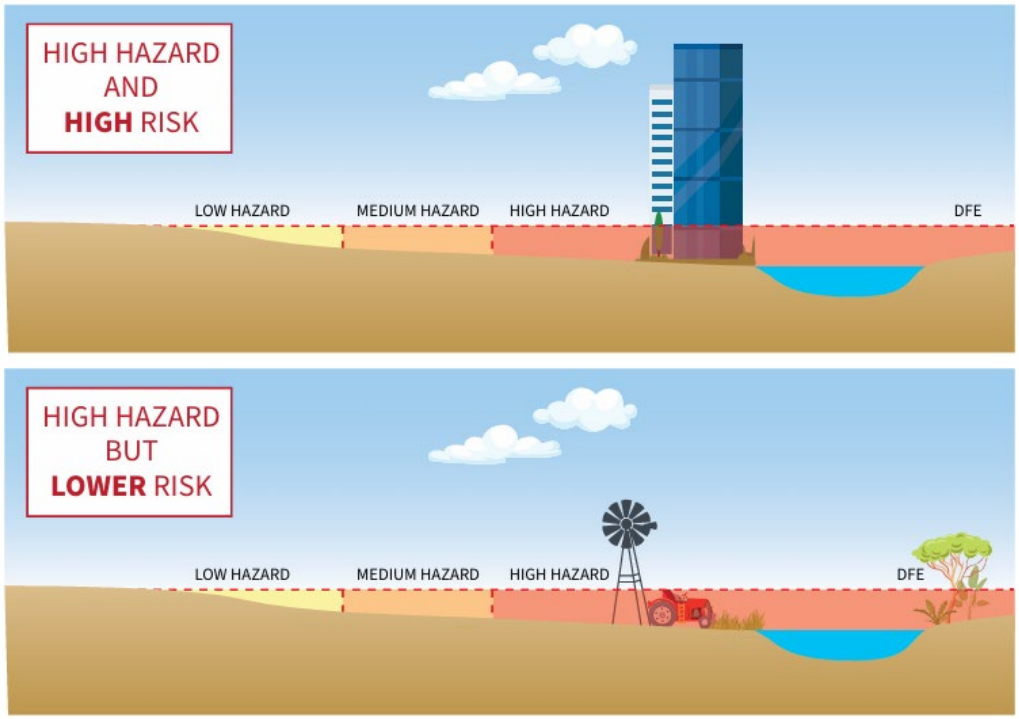


Figure: Difference between flood hazard and risk from Queensland Reconstruction Authority, Planning for Stronger, More Resilient Floodplains dated 2012

[2] As defined by AIDR 2017

Q – What is Annual Exceedance Probability?

A – Annual Exceedance Probability (AEP) is a term used to the express the likelihood of a flood of a given size or larger occurring in a given year.

For example, a 1% AEP means that there is a 1% chance in any given year of this kind of flood event occurring. This is often referred to as a 1 in 100-year flood event.

Q – How are floods classified and what are flood classification curves?

A – Flood hazard classification curves are used to determine the level of safety and damage that floodwaters of a particular depth and velocity would have on a community.

Australian Disaster Resilience Guideline 7-3: Flood Hazard (AIDR 2017) identifies thresholds for each hazard classification level, increasing from H1 to H6 as follows:

Hazard classification	Vulnerability
H1	Generally safe for vehicles, people and buildings
H2	Unsafe for small vehicles
H3	Unsafe for vehicles, children and the elderly
H4	Unsafe for vehicles and people
H5	Unsafe for vehicles and people, all building types vulnerable to structural damage, some less robust building types vulnerable to failure
H6	Unsafe for vehicles and people, all building types considered vulnerable to failure

The curves are particularly useful to determine the level of vulnerability in circumstances such as where the flood depth is low but velocity is high, resulting in a higher flood hazard and vulnerability.

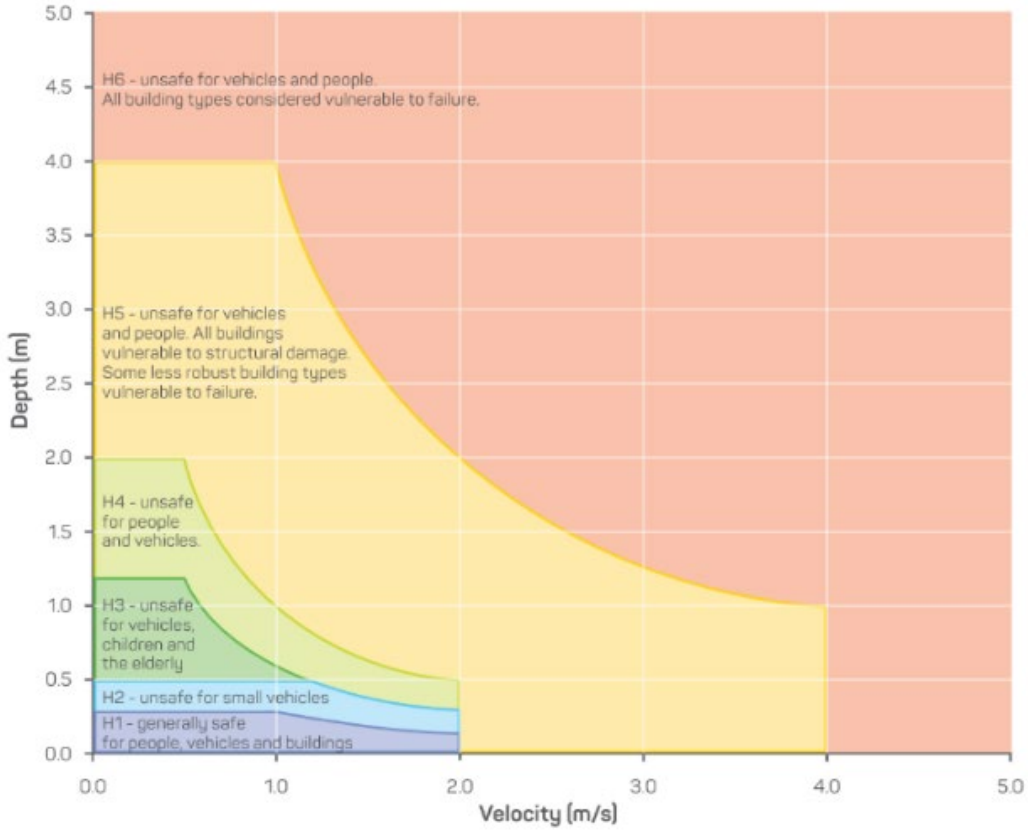


Figure: Australian Disaster Resilience Guideline 7-3 Flood Hazard published by the Australian Institute for Disaster Resilience dated 2017 and referred to the Flood Hazard, Technical Report 2014/07, prepared by Smith GP, Davey EK and Cox RJ at the Water Research Laboratory, University of New South Wales, Sydney dated 2014

Q – What are flood hazard overlays?

A – The Planning and Design Code contains three ‘overlays’ that set out planning rules to guide development in areas with a flooding hazard:

- the Hazards (Flooding) Overlay, which applies to areas that can be subject to an intolerable flood risk, where development should generally be avoided
- the Hazards (Flooding – General) Overlay, which applies to areas with tolerable flood risk and seeks actions such as raising floor levels to mitigate flood risk
- the Hazards (Flooding – Evidence Required) Overlay, which applies to areas where there is no suitable flood study data so precautionary actions are required, such as ensuring the floor levels of new homes are raised above the kerb.

Q – How are the flood hazard classification curves used in updating the flood hazard overlays in the State-Wide Flood Hazard Code Amendment?

A – The flood hazard classification curves have played an important role in identifying where the level of flood risk is considered tolerable and where it is considered intolerable.

The 30 new and enhanced flood studies, commissioned by the department to inform the updated mapping and related policies, used flood hazard classification curves to identify the level of flood hazard and vulnerability for an area.

The likelihood of a one in 100-year flood (1% AEP) and one in 20-year flood (5% AEP) to 2050 and the consequence (flood hazard classification levels with vulnerabilities in H1-H6) were put into a matrix to identify potential areas with tolerable or intolerable risk.

This approach was used to inform the new and updated mapping of the Hazards (Flooding – General) Overlay and Hazard (Flooding) Overlay respectively, with the associated policies.

The Hazards (Flooding – General) Overlay has been applied to areas with tolerable flood risk, where actions can be taken to mitigate the risk.

The Hazard (Flooding) Overlay has been applied to areas where there could be an intolerable flood risk and where actions would be required to avoid or reduce the risk.

		Flood hazard classification			
		H1	H2	H3	H4-6
Likelihood	1% AEP				
	5% AEP				

Legend	
	Tolerable flood risk
	Intolerable flood risk