

20 GLOSSARY

Annual Exceedance Probability (AEP) - the chance of a flood of a given or larger size occurring in any one year, usually expressed as a percentage. For example, if a peak flood discharge of 500 m³/s has an AEP of 5%, it means that there is a 5% chance (that is 1-in-20 chance) of a peak flood discharge of 500 m³/s or larger occurring in any one year (see average recurrence interval).

Australian Height Datum (AHD) - a common national surface level datum approximately corresponding to mean sea level.

Average Recurrence Interval (ARI) - the long-term average number of years between the occurrence of a flood as big as, or larger than, the selected event. For example, floods with a discharge as great as, or greater than, the 20 year ARI flood event will occur on average once every 20 years. ARI is another way of expressing the likelihood of occurrence of a flood event.

Catchment - the land area draining through the main stream, as well as tributary streams, to a particular site. It always relates to an area above a specific location.

Development - is defined in clause 4 of the Environmental Planning and Assessment Act (EP&A Act).

Discharge - the rate of flow of water measured in terms of volume per unit time, for example, cubic metres per second (m³/s). Discharge is different from the speed or velocity of flow, which is a measure of how fast the water is moving for example, metres per second (m/s).

Extreme event - an extreme flood is one which has a very low probability of occurrence and can be used to consider flood damages and emergency management within a floodplain.

Flash flooding - flooding which is sudden and unexpected. It is often caused by sudden local or nearby heavy rainfall. Often defined as flooding which peaks within six hours of the causative rain.

Flood - relatively high stream flow which overtops the natural or artificial banks in any part of a stream, river, estuary, lake or dam, and/or local overland flooding associated with major drainage before entering a watercourse, and/or coastal inundation resulting from super-elevated sea levels and/or waves overtopping coastline defences excluding tsunami.

Flood fringe areas - the remaining area of flood prone land after floodway and flood storage areas have been defined.

Flood liable land - is synonymous with flood prone land i.e. land susceptible to flooding by the Probable Maximum Flood (PMF) event. The term flood liable land now covers the whole of the floodplain, not just that part below the flood planning level, as indicated in the 1986 Floodplain Development Manual.

Flood mitigation standard - the average recurrence interval of the flood, selected as part of the floodplain risk management process that forms the basis for physical works to modify the impacts of flooding.

Floodplain - area of land which is subject to inundation by floods up to and including the Probable Maximum Flood event, that is, flood prone land.

Floodplain risk management options - the measures that might be feasible for the management of a particular area of the floodplain. Preparation of a floodplain risk management plan requires a detailed evaluation of floodplain risk management options.

Floodplain Risk Management Plan - a management plan developed in accordance with the principles and guidelines in the Floodplain Management Manual. Usually includes both written and diagrammatic information describing how particular areas of flood prone land are to be used and managed to achieve defined objectives.

Flood Plan (local) - A sub-plan of a disaster plan that deals specifically with flooding. They can exist at State, Division and local levels. Local flood plans are prepared under the leadership of the State Emergency Service.

Flood planning area - the area of land below the flood planning level and thus subject to flood related development controls. The concept of flood planning area generally supersedes the “flood liable land” concept in the 1986 Floodplain Development Manual.

Flood planning levels (FPL) - are the combinations of flood levels and freeboards selected for planning purposes, as determined in floodplain risk management studies and incorporated in floodplain risk management plans. The concept of flood planning levels supersedes the “standard flood event” of the first edition of the Floodplain Development Manual.

Flood prone land - is land susceptible to flooding by the Probable Maximum Flood (PMF) event. Flood prone land is synonymous with flood liable land.

Flood risk - potential danger to personal safety and potential damage to property resulting from flooding. The degree of risk varies with circumstances across the full range of floods. Flood risk in the Floodplain Management Manual is divided into 3 types, existing, future and continuing risks; these are described below.

- **Existing flood risk:** the risk a community is exposed to as a result of its location on the floodplain.
- **Future flood risk:** the risk a community may be exposed to as a result of new development on the floodplain.
- **Continuing flood risk:** the risk a community is exposed to after floodplain risk management measures have been implemented. For a town protected by levees, the continuing flood risk is the consequences of the levees being overtopped. For an area without any floodplain risk management measures, the continuing flood risk is simply the existence of its flood exposure.

Flood storage areas - those parts of the floodplain that are important for the temporary storage of floodwaters during the passage of a flood. The extent and behaviour of flood storage areas may change with flood severity, and loss of flood storage can increase the severity of flood impacts by reducing natural flood attenuation. Hence, it is necessary to investigate a range of flood sizes before defining flood storage areas.

Floodway areas - those areas of the floodplain where a significant discharge of water occurs during floods; they are often aligned with naturally defined channels. Floodways are areas that, even if only partially blocked, would cause a significant redistribution of flood flow, or a significant increase in flood levels.

Freeboard - a factor of safety typically used in relation to the setting of floor levels, levee crest levels, etc. It is usually expressed as the difference in height between the adopted flood planning level and the flood used to determine the flood planning level. Freeboard provides a factor of safety to compensate for uncertainties in the estimation of flood levels across the floodplain, such as wave action, localised hydraulic behaviour and impacts that are specific event related, such as levee and embankment settlement, and other effects such as “greenhouse” and climate change. Freeboard is included in the flood planning level.

Hazard - a source of potential harm or a situation with a potential to cause loss. In relation to this report the hazard is flooding which has the potential to cause damage to the community.

Local overland flooding - inundation by local runoff rather than overbank discharge from a stream, river, estuary, lake or dam.

Local drainage - are smaller scale problems in urban areas. They are outside the definition of major drainage in this glossary.

Mainstream flooding - inundation of normally dry land occurring when water overflows the natural or artificial banks of a stream, river, estuary, lake or dam.

Minor, moderate and major flooding - both the State Emergency Service and the Bureau of Meteorology use the following definitions in flood warnings to give a general indication of the types of problems expected with a flood:

- **Minor flooding:** causes inconvenience such as closing of minor roads and the submergence of low level bridges. The lower limit of this class of flooding on the reference gauge is the initial flood level at which landholders and townspeople begin to be flooded.
- **Moderate flooding:** low-lying areas are inundated requiring removal of stock and/or evacuation of some houses. Main traffic routes may be covered.
- **Major flooding:** appreciable urban areas are flooded and/or extensive rural areas are flooded. Properties, villages and towns can be isolated.

Modification measures - measures that modify either of the flood, the property or the response to flooding.

MHWS (mean high water spring)-the highest level that spring tides reach on the average over a time period.

Peak discharge - the maximum discharge occurring during a flood event.

Pluviograph - a self-registering rain gauge typically measuring and recording hourly rainfall depths

Probable Maximum Flood (PMF) - the largest flood that could conceivably occur at a particular location, usually estimated from Probable Maximum Precipitation. Generally, it is not physically or economically possible to provide complete protection against this event. The PMF defines the extent of flood prone land, that is, the floodplain. The extent, nature and potential consequences of flooding associated with the PMF event should be addressed in a floodplain risk management study.

Probable Maximum Precipitation (PMP) - the theoretical greatest depth of precipitation for a given duration meteorologically possible over a given size storm area at a particular location at a particular time of the year, with no allowance made for long-term climatic trends (World Meteorological Organisation, 1986). It is the primary input to the estimation of the Probable Maximum Flood.

Probability - a statistical measure of the expected chance of flooding (see Annual Exceedance Probability).

Risk - chance of something happening that will have an impact. It is measured in terms of consequences and likelihood. In the context of this report it is the likelihood of consequences arising from the interaction of floods, communities and the environment. The risk of such an event occurring over a longer period is much higher.

Risk management - the systematic application of management policies, procedures and practices to the tasks of identifying, analysing, assessing, treating and monitoring flood risk. Flood risk management is undertaken as part of a Floodplain Risk Management Study. The Floodplain Risk Management Plan reflects the adopted means of managing flood risk.

Runoff - the amount of rainfall that actually ends up as streamflow, also known as rainfall excess.

Stage - equivalent to "water level". Both are measured with reference to a specified datum.

Stage hydrograph - a graph that shows how the water level at a particular location changes with time during a flood. It must be referenced to a particular datum.

Tathra Bridge – also quoted as Tathra-Bermagui Bridge or Hancock Bridge

Temporal pattern – refers to the overall pattern of the rainfall event over time and is specific to spatial location and storm duration.