

My property was never classified as 'flood prone' or 'flood liable' before. Now it is in a Low Flood Risk Precinct. Why?

The State Government changed the meaning of the terms 'flood prone', 'flood liable' and 'floodplain' in 2001. Prior to this time, these terms generally related to land below the 100 year flood level. Now it is different. These terms now relate to all land that could possibly be inundated, up to an extreme flood known as the probable maximum flood (PMF). This is a very rare flood.

The reason the Government changed the definition of these terms was because there was always some land above the 100 year flood level that was at risk of being inundated in rarer and more extreme flood events. History has shown that these rarer flood events can and do happen (e.g. the 1990 flood in Nyngan, the November 1996 flood in Coffs Harbour, the August 1998 flood in Wollongong, the 1998 flood in Katherine, the 2002 floods in Europe, etc).

It should be understood that this change in classification has not changed the real flood risks on your property.



Hart Drive, North Wentworthville in April 1988.

Will I be able to get house and contents insurance if I am in a Flood Risk Precinct?

In contrast to the USA and many European countries, flood insurance is generally not available for residential property in Australia. Following the disastrous floods in Coffs Harbour in November 1996 and in Wollongong in August 1998, some insurance companies are now offering very limited flood cover. The most likely situation is that your insurer does not offer you flood cover. If limited flood cover is offered, the classification of your property within a Flood Risk Precinct is unlikely to alter the availability of cover. Obviously, insurance policies and conditions may change over time or between insurance companies, and you should confirm the specific details with your insurer.

Will I be able to get a home loan if I am in a Flood Risk Precinct?

Most banks and lending institutions do not account for flood risks when assessing home loan applications unless there is a very significant risk of flooding at your property. The system of Flood Risk Precinct classification will make it clear to all concerned, the nature of the flood risks. Under the previous system, if a prospective lending authority made enquiries, they would have identified the nature of the flood risk and considered it during assessment of home loan applications. As a result, it is unlikely that the classification of your property within a Flood Risk Precinct will alter your ability to obtain a home loan. Nevertheless, property owners who are concerned about the ability to obtain lending should clarify the situation with their own lending institution.

Will the Flood Risk Precinct maps be changed over time?

All mapping undertaken by the Trust and the local councils is subjected to ongoing review. As these reviews take place, it is likely that changes to the mapping will occur, especially if new flood information or ground topography information becomes available. This is particularly the case with areas subject to overland flooding, where flood studies have not yet been carried out.

FLOODPLAIN RISK MANAGEMENT STUDIES

Glossary

Note that terms shown in bold are described elsewhere in this Glossary.

100 year flood—A flood that occurs (or is exceeded) on average once every 100 years. Also known as a 1% flood. This flood has a 1% annual exceedance probability and an average recurrence interval of 100 years.

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.

effective warning time—The time available after receiving advice of an impending **flood** and before the floodwaters prevent appropriate flood response actions being undertaken. The **effective warning time** is typically used to move farm equipment, move stock, raise furniture, evacuate people and transport their possessions.

flood—A relatively high stream flow that overtops the natural or artificial banks in any part of a stream, river, estuary, lake or dam. It also includes local overland flooding associated with major drainage before entering a watercourse, or coastal inundation resulting from raised sea levels, or waves overtopping the coastline.

flood hazard—The potential for damage to property or risk to persons during a **flood**. Flood hazard is a key tool used to determine flood severity and is used for assessing the suitability of future types of land use.

flood liable land—Land susceptible to flooding up to the **probable maximum flood (PMF)**. Also called **flood prone land**. Note that the term flood liable land now covers the whole of the **floodplain**, not just that part below the 100 year flood level.

Flood Planning Level (FPL)—The combination 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 designated flood or the flood standard used in earlier studies.

flood prone land—Land susceptible to flooding up to the **probable maximum flood (PMF)**. Also called **flood liable land**.

flood risk precinct—An area of land with similar flood risks and where similar development controls may be applied by a council to manage the flood risk. (The flood risk is determined based on the existing development in the precinct or assuming the precinct is developed with normal residential uses). Usually the floodplain is categorised into three flood risk precincts — 'low', 'medium' and 'high' — although other classifications can sometimes be used. (See also **risk**).

flood study—A study that investigates flood behaviour, including identification of flood extents, flood levels and flood velocities for a range of flood sizes.

floodplain—The area of land that is subject to inundation by floods up to and including the probable maximum flood event, that is, **flood prone land** or **flood liable land**.

Floodplain Risk Management Plan—The outcome of a **Floodplain Risk Management Study**.

Floodplain Risk Management Study—These studies are carried out in accordance with the Floodplain Management Manual (NSW

Government, 2001) and assess options for minimising the danger to life and property during **floods**. These measures, referred to as 'floodplain management measures/options', aim to achieve an equitable balance between environmental, social, economic, financial and engineering considerations. The outcome of a Floodplain Risk Management Study is a **Floodplain Risk Management Plan**.

flow—see **discharge**

freeboard—A factor of safety expressed as the height above the design flood 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.

high flood hazard—For a particular size **flood**, there would be a possible danger to personal safety, able-bodied adults would have difficulty wading to safety, evacuation by trucks would be difficult and there would be a potential for significant structural damage to buildings.

low flood hazard—For a particular size flood, able-bodied adults would generally have little difficulty wading and trucks could be used to evacuate people and their possessions should it be necessary.

m/s—metres per second. Unit used to describe the **velocity** of floodwaters.

m³/s—Cubic metres per second or 'cumecs'. A unit of measurement for creek flows or **discharges**. It the rate of flow of water measured in terms of volume per unit time.

probable maximum flood (PMF)—The largest flood likely to ever occur.

It has a very rare chance of occurring. The PMF defines the extent of **flood prone land** or **flood liable land**, that is, the **floodplain**.

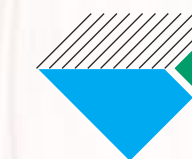
reliable access—During a **flood**, reliable access means the ability for people to safely evacuate an area subject to imminent flooding within **effective warning time**, having regard to the depth and **velocity** of floodwaters, the suitability of the evacuation route, and other relevant factors.

risk—Risk is measured in terms of consequences and likelihood. In the context of floodplain management, it is the likelihood and consequences arising from the interaction of floods, communities and the environment.

For example, the potential inundation of an aged person's facility presents a greater flood risk than the potential inundation of a sportsground amenities block (if both buildings were to experience the same type and probability of flooding). Reducing the probability of flooding reduces the risk, increasing the consequences increases risk. (See also **flood risk precinct**).

risk management—The process of identifying, analysing, evaluating, treating, monitoring and communicating risks. A generic framework for risk management in Australia is provided in the joint Australian and New Zealand Standard AS/NZS-4360;1999.

velocity—The term used to describe the speed of floodwaters, usually in m/s.



UPPER PARRAMATTA RIVER CATCHMENT TRUST

Floodplain Management Frequently Asked Questions



What are Flood Studies?

A flood study consists of a comprehensive technical investigation of flood behaviour. It defines the nature and extent of the flood risk by providing information on the extent, level and velocity of floodwaters and on the distribution of flood flows across various sections of the floodplain. This technical information provides the basis from which Floodplain Risk Management Studies and Plans are developed.

Why do councils prepare Floodplain Risk Management Studies and Plans?

Under NSW legislation, councils have the primary responsibility for managing development on floodplains. To do so, councils need a strategic plan that considers the potential flood risks and balances these against the beneficial use of the floodplain by development. This requires consideration of a range of environmental, social, economic, financial and engineering issues in a Floodplain Risk Management Study. The outcome of the study is the Floodplain Risk Management Plan, which details how best to manage flood risks in the floodplain for the foreseeable future. The plan comprises a coordinated mix of measures to address the existing, future, and continuing flood risks.

In the Upper Parramatta River catchment the Trust has co-ordinated a Floodplain Risk Management Study and preparation of a Floodplain Risk Management Plan for the catchment. This work was carried out on behalf of the four local councils that cover parts of the catchment. It was guided by a catchment Floodplain Risk Management Committee with representatives of the four local councils, the Trust, the community and relevant government agencies. The four councils will be responsible for implementing the adopted Plan in their local government area.

What is the probable maximum flood (PMF)?

The PMF is the largest flood that could possibly occur. While a flood of this magnitude is very rare, a number of historical floods in Australia have approached the magnitude of a PMF. Every property that could be inundated by a PMF will have some flood risk, even if it is very small.

Under the State Government changes implemented during 2001, councils must now consider all flood risks, even these potentially small ones, when managing floodplains. As part of the State Government changes, the definitions of the terms 'flood liable', 'flood prone' and 'floodplain' have been changed to refer to land inundated by all floods up to the PMF.

What is the 100 year flood?

A 100 year flood is the flood that will occur or be exceeded on average once every 100 years. It has a probability of 1% of occurring in any given year. If your area has had a 100 year flood, it is a fallacy to think you will need to wait another 99 years before the next flood arrives. Floods do not happen like that. Some parts of Australia have received a couple of 100 year floods in one decade. On average, if you live to be 70 years old, you have a better than even chance of experiencing a 100 year flood.

Why is the 100 year flood adopted as the Flood Planning Level?

The four local councils in the Upper Parramatta River catchment have adopted the 100 year flood (plus 0.5m freeboard) as the Flood Planning Level for residential and other buildings. This means that the floor level of all new residential buildings must be located at least 0.5m above the estimated 100 year flood level.

This standard is consistent with the level adopted by most local councils in NSW. It recognises that there would be an unacceptable increase in flood risks and damages should a lower level be adopted, and an unnecessary burden on new development should a higher level be adopted.



Flooded street in Toongabbie in August 1986.



The corner of Church Street and North Rocks Road, North Parramatta was flooded in February 1990.

Why do flood levels need to be reviewed over time?

There is a chance that very large floods will occur in the future. Because some of these floods will exceed any that have been experienced since European settlement, the height of future floodwaters is usually predicted using computer models. These computer models simulate flood levels and velocities for a range of flood sizes and flood probabilities. Given the importance of estimating flood levels accurately, the councils and the Upper Parramatta River Catchment Trust engage expert consultants and employ specialist staff to establish and operate the computer models.

From time to time the computer models are revised and predicted flood levels can change. The resultant change in flood levels however is normally small. The reasons why the computer models are revised include:

- ❖ new rainfall or ground topography information becomes available;
- ❖ new floods provide additional data with which to fine-tune the models;
- ❖ better computer models become available as the science of flood modelling improves and computer capabilities increase;
- ❖ flood mitigation works reduce flood levels; and
- ❖ development occurs within the catchment.

How have the flood risk maps been prepared?

Because large and rare floods have not often been experienced since European settlement, computer models are used to compute the heights and velocities of major floods. The Trust's specialist staff, as well as expert consultants engaged by the councils and the Trust, establish and operate the computer models. Because of its critical importance, the modelling is closely scrutinised before council formally adopts the flood levels.

Maps of flood risks (e.g. 'low', 'medium' and 'high') are prepared after consideration of such issues as:

- ❖ flood levels and velocities for a range of possible floods;
- ❖ ground levels;
- ❖ the duration of flooding; and
- ❖ evacuation and access routes.

My property is in a Low Flood Risk Precinct. What does this mean?

The classification of a 'Low Flood Risk Precinct' means that your property will not be inundated in a 100 year flood, but still has a very slight chance of inundation from larger (i.e. rarer) floods. If you are a residential property owner, there will be virtually no change to how you may develop your property. However, there may be controls on the location of essential services, such as hospitals and emergency services.

My property is in a Medium Flood Risk Precinct. What does this mean?

The classification of a 'Medium Flood Risk Precinct' means that your property will be inundated in a 100 year flood. However conditions are unlikely to be hazardous. If you are a residential property owner, development controls will be similar to those that currently exist.

My property is in a High Flood Risk Precinct. What does this mean?

The classification of a 'High Flood Risk Precinct' means that your property will be inundated in a 100 year flood and that conditions may be hazardous. Personal safety could be in danger; able bodied adults may have difficulty wading to safety, evacuation by trucks may be difficult, or there may be a potential for significant structural damage to buildings. This is an area of higher hazard where stricter controls are applied.

Will my property value be altered if I am in a Flood Risk Precinct?

Any change in a council's classification of properties may have some impact on property values. If your property is now classified as being in a Flood Risk Precinct, the real flood risks on your property have not changed. Only its classification has altered. A prospective purchaser of your property could have previously discovered this risk if they had made enquiries themselves.

If you are in a Low Flood Risk Precinct, generally there will be no controls on normal residential type development. Previous valuation studies have shown that under these circumstances, your property values will not alter over the long term. Certainly, when a new system of classifying flood risks is introduced, there may be some short-term effect, particularly if the development implications of the precinct classification are not understood properly. But this should only be a short-term effect until the property market understands that, over the long-term, the Low Flood Risk Precinct classification will not change the way you use or develop your property.

Ultimately, however, the property market determines the value of any residential property. Individual owners should seek their own valuation advice if they are concerned that the flood risk precinct categorisation may influence their property value.

Prior to doing so, it is best to ascertain the actual flood pattern on the property. Council may be able to assist with this.

Toongabbie shops in flood in April 1988.