Potential flood risks on the Gold Coast

The Gold Coast is subject to existing, future and residual flood risks and has experienced more than 45 floods since 1925. Past flood events caused moderate to extensive damage to private property, community buildings, bridges and roads.

Comprehensive flood studies on the Gold Coast have shown that several thousand properties across the whole city would experience over-floor flooding during a one in 100 year flood event. Although this flooding in some areas is only for a very limited depth of inundation and duration, the damage bill for the Nerang River catchment – the most populated catchment on the Gold Coast – could potentially exceed $200 million excluding damage to infrastructure and intangible losses. Several thousand people would potentially be directly affected in the unlikely event of all catchments in the city simultaneously experiencing a one in 100 year flood event.

Flood maps

City of Gold Coast (City) recognises that residents are interested in potential flood inundation of their property. While flood maps may indicate the likely extent of flooding, these are not accurate enough to indicate the flood impacts on a particular property.

The City Plan Interactive Mapping tool is designed to address the statutory needs of local government with respect to development assessment by identifying hazard areas that are subject to flood, and act as a trigger for development assessment. The maps reflect the impact of one in 100 year ARI (Average Recurrence Interval) flood for the majority of areas. The maps consider City policy with respect to protecting mitigation benefits from raising Hinze Dam. These maps by themselves do not show flood risk in its totality. The areas beyond the flood line shown in these maps are not necessarily immune from flooding. Infrequent or local floods can affect any property.

Find Frequently Asked Questions below.

Flood level search

A Flood Search system is in place to provide detailed peak flood levels which can then be compared with the resident’s information about their property. It is recommended that a licensed surveyor be engaged to accurately determine property and floor levels.

Obtain a Flood Search report

The outcome of a flood search is the Designated Flood Level, which is reported in metres AHD (Australian Height Datum), the nationally adopted datum or standard to which all elevation for mapping is to be referred. As a general guide, 0.0 metres AHD is close to the mean sea level. Therefore 1.5 metres AHD is approximately equivalent to 1.5 metres above Mean Sea Level. It is to be noted that tide information is not on this datum.

The Designated Flood Level is used as the basis for determining floor levels for specific service facilities, general utilities and residential properties. The Designated Flood Level for residential properties is the 100 year ARI (Average Recurrence Interval) flood.

To enhance future safety for residents, the City requires that habitable floor levels are a minimum of 300 millimetres above the Designated Flood Level.

Flood search results are associated with riverine or regional flooding only, not local flooding. Regional flooding is caused by long duration rainfall over a whole catchment or number of catchments. Local flooding is caused by high intensity and short duration rainfall over a local drainage catchment.

A flood the size of a 100 year ARI has one chance in 100 (one per cent) of occurring in any one year. However, the rainfall events which cause floods are random and there is no guarantee when such a flood will occur, that it won't be much larger, or that it will only occur once in any year.

Download an example of a Flood Search report.

How do I request a Flood Search report?

Complete and submit a Search Request form, which can be obtained from any Customer Service Centre or by downloading the form from our website.

Find the link to download the Search Request form in PDF format below.

An administrative fee applies for undertaking the search and forwarding the results. Fees can be found in the Register of fees and charges.

Payment of the search fee can be made at your nearest Customer Service Centre.

History

The former Albert Shire and Gold Coast Councils used to provide flood levels collected during past flood events for properties if records were available at or nearby the property. In 1995, historical flood levels in the Nerang River system downstream of the Pacific Highway were substituted with computer generated flood levels from the then Department of Primary Industries for the 100 year ARI flood event.

After the amalgamation of the two local authorities, initiatives were taken to streamline the flood search process and provide peak flood levels derived from computer-based hydraulic modelling.

In 1999, the Flood Search system was created, which combined both computer modelled data and historical data. The result is a standardised citywide flood level database which is updated periodically.

If your property level is below the Designated Flood Level, your property may be affected by a 100 year ARI flood. If your property is above the Designated Flood Level, your property may not be affected.
Further information

For further information, contact us.

Related information

- Be prepared
- Buying, selling and searches
- Flood mitigation
- Preparing for a flood

Jump to key information

**Key information**

**Brochures, fact sheets & reports**

- Flood Search Report

**External links**

- City Plan Interactive Mapping
- PD Online - Property Enquiry

**Forms & applications**

**Search Request Form**

City of Gold Coast (City) keeps a record of every parcel of rateable land within its boundaries.

Written search reports are created by generating and extracting specific data relevant to a particular property from our property systems and are accurate at the time of data extraction.

Downloads: Search Request Form (0.05mb)

**Frequently asked questions**

**What is the difference between local, riverine and regional flooding?**

**Local flooding:** Intense burst of rainfall over a short period of time may cause excessive run-off that builds up in a confined area and causes localized flooding. Inundation is expected to last only for a limited period of time until the run-off is able to drain away.

**Regional flooding:** Continuous heavy rainfall across a number of river catchments is likely to cause inundation across an extensive area. It may take a number of days for these floodwaters to subsides.

**Riverine flooding:** While similar to regional flooding, riverine flooding occurs with excessive rainfall in one river catchment only and inundation is generally confined to areas linked with that river system.

During both riverine and regional floods, areas which normally experience local flooding are also likely to experience higher flood levels compared to those recorded in the main drainage paths such as creeks, canals, lakes and rivers.

**Is there a fee associated with a Flood Search?**

All searches undertaken by the City of Gold Coast attract a fee for processing. Refer to the [Fees and charges](#) for the current fee for flood level information. The written report may prove valuable when purchasing a property, building a home or when applying for flood insurance. (The fee excludes the cost of collecting the data and producing the computer flood models.)

**Does City of Gold Coast produce general flood maps for residents to view?**
The City Plan Interactive Mapping tool provides a flood overlay option that indicates whether a property requires flood assessment.

A Flood Search system is in place to provide detailed peak flood levels (in AHD - Australian standard unit of elevation) which can then be compared with the resident's information about their property. It is recommended that a licensed surveyor be engaged to accurately determine property and floor levels.

As shown in the diagram, some parts of the property may be below the Designated Flood Level and therefore may be inundated during a 100 year ARI flood event.

What is AHD?

AHD refers to Australian Height Datum. This is the standard elevation reference for mapping purposes adopted by the National Mapping Council of Australia. As a general guide, 0.0m AHD is approximately equal to mean sea level.

What is a "100 year ARI"?

ARI = Average Recurrence Interval. When talking about floods, this is an indication of how frequently a flood of a particular size is likely to occur on average.

Therefore, a flood the size of a 100 year ARI flood is likely to occur once in 100 years on average, but it has a one in 100 or one per cent chance of occurring in any one year. A flood of this size is a 10 year ARI is likely to occur once in 10 years on average, and it has a one in 10 chance of occurring in any one year.

Will a flood with a "100 year ARI" occur only once in 100 years?

As this is often referred to as the "100 year flood", it is tempting to think that it will only happen once in 100 years.

A "time in 100 year ARI" refers to the magnitude or size of a flood. It means that a flood of that size or larger is likely to occur only once in 100 years, but it has one chance in 100 (one per cent) of occurring in any year.

However, the rainfall events that cause floods are random and there is no guarantee when such a flood will occur, nor that it won't be much larger.

In fact, floods of that size have been known to occur more frequently than once in 100 years. Karmaly, in northern NSW experienced two floods of this size in eight months in 1999 and 1993. During the 1990s the Brisbane River experienced three 100 year ARI floods over a period of five years. (Floodplain Management in Australian Best Practice Principles and Guidelines, CSIRO, 2004)

Floods will happen. There is approximately a 50 per cent chance of experiencing a one in 100 year ARI flood at least once in a 70 year lifespan. (Floodplain Management in Australian Best Practice Principles and Guidelines, CSIRO, 2004)

Is the one in 100 year ARI the largest flood we are likely to experience?

No. It is possible that floods of a much greater magnitude could occur.

The one in 100 year ARI flood event is the minimum standard used by City of Gold Coast in determining the Designated Flood Level for habitable floors. The Designated Flood Level is applied when assessing development applications to ensure that habitable rooms in homes are built to a certain minimum level.

Many other councils throughout Australia have also adopted the 100 year ARI flood event for the same purpose.

Why are some new roads inundated during a flood?

Many factors are considered when designing new roads, including potential regional flooding. Roads may be designed to allow floodwaters to continue to flow out of the river system into the ocean rather than temporarily holding them back. In many instances residential roads may be designed to a height above the one in 100 ARI flood event, others to one in 50 ARI or one in 20 ARI, to ensure evacuation routes remain possible during a regional flood event.

What is temporary flood storage?

Temporary flood storage areas are areas that hold back some rainfall runoff for discharge later. This has the effect of reducing peak flood levels downstream. As the downstream flood levels subside all floodwaters progressively release and escape the river system.

Flood storage areas can be found naturally in floodplains or they can be constructed. The Merimbula/Cambewarra Floodplain acts as a natural flood storage area. Council's planning codes act to preserve its storage capacity.

Natural storage area are often used to benefit community as sites for a range of recreational activities. They also provide, aquatic foods and poll sources are often designed to provide temporary flood storage.
How do I obtain flood levels?

Apply to City of Gold Coast for a Flood Search. You will receive a written report that will indicate flood levels generated by computer models and historical information if available. Where the report indicates no information available, the City has no information, but it does not necessarily mean that a property is immune from flooding.

Is Council considering climate change in its floodplain planning?

Yes. Council engaged CSIRO to undertake a number of investigations into the possible effects of climate change as it relates to the Gold Coast Region.

Does City of Gold Coast allow for future development in its floodplain planning?

Yes, but in a controlled way as articulated in the City’s flood contrast policy. The main aim of this control is to ensure that development in a flood plain does not cause any adverse flood impact on any other properties on the city as a whole and on the City’s capacity to exercise its responsibilities with respect to flood emergency management.

Can Council control floodwaters at Hinze Dam?

No. The spillway at Hinze Dam has no flood or flood gates that can control outflows. The geometry is fixed and the spillway has a central slot.

What is flood modelling?

Flood modelling is a term that is used to describe the process of artificially trying to represent a river or floodplain system to determine the magnitude, extent and depth of flooding, how fast floodwaters rise and the implications for flood damage and emergency planning.

Has building the Southport Seaway made a difference to flood levels in rivers?

Yes. For the lower reaches of rivers. In the Australia Day 1974 flood, the Broadwater filled to a level of 4.148 metres (Australian Height Datum, AHD) or about 5.68 metres above mean tidal level. Most of this water was floodwater runoff from the river and earlier inflows from Mersons Bay.

In 1974, the Broadwater had limited tidal connections to the ocean, but since the construction of the Seaway, floodwaters can now escape to the ocean much faster. If the 1974 rainfall event occurred, it is estimated that the Broadwater flood levels would be 0.3 metres to 0.65 metres less than the levels that occurred in 1974.

However, the Seaway also means that the Broadwater is now much more susceptible to storm surge than it was in 1974.

Can I get insurance against flood damage?

Yes, some insurance companies offer flood insurance either as part of their home and contents policies or as an optional extra. Check your policy or speak with your insurance company to determine whether you are covered and ‘exclusions’ apply.

The Insurance Council of Australia has produced a brochure Flood Insurance: Are You Covered? that can be downloaded from their website www.ica.com.au.

Does the City of Gold Coast provide advice to insurance companies about flood risk to individual properties or areas?

No. The City has provided its flood maps to the insurance industry in the past. However, insurance companies have their own means of determining flood risk for individual properties. Some companies have developed their own flood information while others seek information from the applicant, which may include the results of a Flood Search.

Individuals can lodge an application for a Flood Search for a specific property with the City for an administrative fee. Current fees for flood level information can be found in the City’s Receptor of fees and charges.

When did the State Planning Policy 'Mitigating the Adverse Impacts of Flood, Bushfire and Landslide' come into effect?

This policy came into effect on 1 September 2011 as a Joint Initiative of the Departments of Local Government and Planning and Emergency Services. The purpose of the policy is to ensure natural hazards are adequately considered in Council’s Planning Scheme. It allows a consistent approach to planning throughout the State. Details can be found at www.emergency.qld.gov.au.

Will the State Planning Policy change the way City of Gold Coast addresses flood risk and manages its floodplains?

No. Council of the City of Gold Coast has contributed to developing this policy and its current planning code for flood affected areas is more onerous in parts than the Planning Policy itself.