

Flood Overlay



INFORMATION SHEET

Draft Lockyer Valley Planning Scheme

Planning, which is also referred to as urban planning, or town planning is specifically concerned with shaping cities, towns and regions by managing development, infrastructure and services.

A Planning Scheme is one of the most important tools available to Council to guide, promote and facilitate economic development opportunities as well as make our towns and region safe, healthy, liveable and attractive places to live, work and play.

A Planning Scheme identifies how land should be used and what type of development is supported by Council on that land. The Planning Scheme is like a manual that is used to guide land use outcomes across the region.

The Draft Lockyer Valley Planning Scheme has been prepared in accordance with the requirements prescribed by the *Planning Act 2016*.

What is a Flood hazard overlay?

Flooding may cause harm to people, damage to property and/or infrastructure, and impact our economy and the environment. Flooding is an example of a natural hazard and the negative impacts of flooding can be reduced through land use planning. While natural hazards are often unpredictable in nature, modern computer modelling methods are continually improving flooding predictions.

The Flood hazard overlay includes areas that are at risk of flooding. The overlay has been identified to ensure development either avoids or becomes increasingly resilient to flood risk. This may be achieved by:

- ✓ Progressively reducing the intensity of development in flood hazard areas over time;
- ✓ Avoiding the further subdivision of land for urban purposes within flood hazard areas;
- ✓ Retaining flood hazard areas for rural activities, outdoor sport and recreation, park and environmental uses, and other extremely low intensity uses that are able to function without risk to life or property in the event of flooding, or require major repair immediately after a flood event; and

- ✓ Locating strategic community facilities and supporting infrastructure and services that are required during an emergency, outside flood hazard areas.

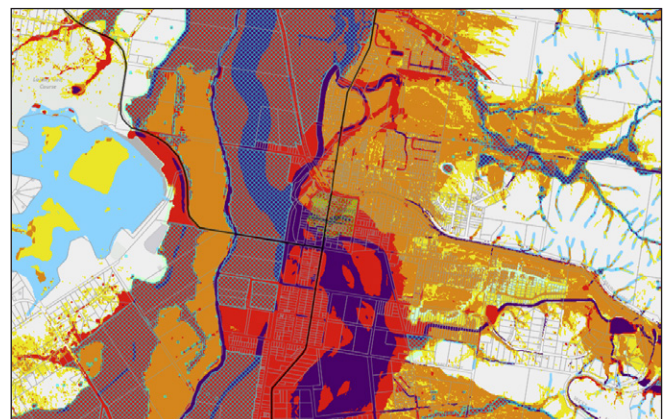
Development within Flood hazard areas

The Flood hazard overlay code provides clear guidance for any future development in flood hazard areas. The purpose of the Flood hazard overlay code is to control development at various levels of flood risk to:

1. avoid development where risks are intolerable;
2. protect life and property from intolerable flood risk;
3. provide a fit-for-purpose flood response that aligns with the level of flood risk;
4. provide regulatory controls in areas where risk is tolerable; and
5. allow the natural floodplain function to continue.

Flood hazard overlay maps

The Flood hazard overlay maps consider a range of flood events of lesser and greater magnitude than a 1% AEP (i.e. 1 in 100 year or defined flood event). An example of the OM7 - Flood Hazard overlay map is below:



Scan the QR code to view the draft planning scheme, scheme maps and access the submissions portal.



The risk map also incorporates flood behaviour information such as depth, velocity, and hazard. The Flood risk mapping has been prepared in a manner consistent with *State Planning Policy 2017*.

The Flood hazard overlay risk categories are formed using four elements to manage flooding:

- ✓ Hydraulic risk;
- ✓ Flood function;
- ✓ Flood islands; and
- ✓ Warning time.

Hydraulic risk (HR)

To formulate a hydraulic risk standard Hazard category (H) is used. A Hazard category (H) is a general classification of flood hazard on a floodplain. The categories relate to the vulnerability of people and property during a flood. There are six categories, where H1 is the lowest level of risk and H6 is the highest level of risk:

- ✓ H1 Generally safe for vehicles, people and buildings. Relatively benign flood conditions. No vulnerability constraints.
- ✓ 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. Buildings require special engineering design and construction.
- ✓ H6 Unsafe for vehicles and people. All buildings types considered vulnerable to failure.

The hydraulic risk involves the modelling of likely flood events. An essential component of flood management studies is to determine flood function or hydraulic categorisation of the floodplain. Hydraulic risk aids the

development of appropriate flood risk management strategies into the future. The Hydraulic risk categories, HR1 to HR5, as shown below:

Hydraulic risk matrix

AEP	H1	H2	H3	H4	H5	H6
PMF	HR5	HR5	HR5	HR5	HR5	HR5
1 in 500	HR4	HR4	HR4	HR4	HR4	HR4
1 in 200	HR4	HR4	HR4	HR3	HR3	HR3
2011	HR4	HR3	HR3	HR2	HR2	HR2
1 in 100	HR4	HR3	HR3	HR2	HR2	HR2
1 in 50	HR4	HR3	HR3	HR2	HR2	HR1
1 in 20	HR3	HR2	HR2	HR1	HR1	HR1
1 in 10	HR3	HR2	HR2	HR1	HR1	HR1

What is AEP?

Annual exceedance probability (AEP) refers to the probability of a flood event occurring in any year. The probability is expressed as a percentage. A defined flood event with a 1% AEP is a flood that has a 1% chance of occurring in any one year. The 1% AEP is also known as the 1 in 100 year Average Recurrence Interval event and is commonly used for urban planning purposes.

What is PMF?

Probable Maximum Flood (PMF) is an engineering design concept that uses probable maximum rainfall to define the maximum limit of a flood's extent, based on the hydrologic conditions of the region being modelled. As such the PMF is unlikely to have a clear Annual Exceedance Probability.



Flood function

Flood function reflects different ways floods behave within the floodplain. These are:

- ✓ Floodway - areas where fast and large volumes of water flows. These are usually within the creeks and natural waterways.
- ✓ Flood Storage - areas where part of the floodplain where water movement is slowed and stored during a flood.
- ✓ Flood Fringe – areas of the flood plain that are not identified as floodway or flood storage.

Flood islands

Flood islands are areas within the floodplain that remain dry but are surrounded by floodwaters. They may stay dry or become wet if a flood reaches a higher magnitude. Flood islands have a higher risk to people, as they can become trapped. People in areas of flood islands may need to evacuate before water encroaches into their property. Three types of flood islands have been considered in categorising flood risk:

- ✓ Low flood island category A - areas which are dry and surrounded by floodwaters in the 5% (1 in 20 years) AEP event but become inundated once the event reaches a 1% (1 in 100 year) AEP event.



- ✓ Low flood island category B - areas which are dry but surrounded by floodwaters in the 1% (1 in 100 year) AEP event but become inundated once the event reaches a Probable Maximum Flood (PMF).
- ✓ High flood islands – areas surrounded by floodwaters, and the land is located above the Probable Maximum Flood (PMF).

Warning time

Flash flooding occurs when the warning time is less than 6 hours. Warning time is an important measure in categorising flood risk. People who may be affected by flood need sufficient time to evacuate to a safer place.

What makes up the Flood categories?

All of the above elements are combined to create the Flood risk categories shown in the Flood hazard overlay.

FLOOD RISK CATEGORY	HYDRAULIC RISK AND RISK MULTIPLIER USED
Extreme	Below Grantham – H5 & H6 from the 1%AEP event Grantham and above – H5 & H6 from 2011 event
High	Hydraulic risk categories 1 & 2 Low Flood Island - Category A Floodway (in 1% AEP Event) Any Moderate flood risk areas with warning time of less than 6 hours
Moderate	Hydraulic risk category 3 Low Flood Island - Category B High Flood Island Flood Storage areas (in 1% AEP Event) Any Low flood risk areas with warning time of less than 6 hours
Low	Hydraulic risk category 4 Flood fringe areas (in 1% AEP Event)
Very low	Hydraulic risk category 5

How do the Flood risk categories regulate development?

The flood risk categories on the Overlay maps are used to regulate development in a manner that is consistent with the level of risk. The table below shows the flood risk categories and an example of how these impact on potential residential development.

FLOOD RISK CATEGORIES	RISK PROFILE	EXAMPLE DEVELOPMENT RESPONSE
Extreme	Intolerable	New residential development is avoided
High Laidley flood resilient precinct Withcott flood resilient precinct Valley flood plain precinct	Intolerable	New residential development is avoided
Moderate	Tolerable	Mitigate flood risk and limit new residential development.
Low	Tolerable	Mitigate flood risk to new residential development
Very low	Acceptable	Residential development may be accepted.
Overland flow paths	Unknown risk	Avoid or provide a flood risk assessment study to determine the flood risk to residential development.

Frequently asked questions

Q. What is a flood model?

A. A flood model is a visual representation of rainfall events ranging from high probability (frequent rain events) through to low probability rain events that have a high extent and impact. The model aids to determine areas of the floodplain that are affected by flood water and the level to which they are affected. The flood level impacts are represented in the TLPI as low, medium and high flood hazard. The level of assessment of proposed development may depend on the defined flood hazard.

Flood hazard area for Building Regulation

Section 8 of the *Building Regulation 2021* allows a local government to designate part of its region as a 'flood hazard area'.

Designating a Flood Hazard Area for Building Regulation purposes will provide the most up to date flood information to help industry professionals, as the mapping will be updated as new data and information becomes available.

The designated Flood Hazard Area would be used by industry professionals for building regulation purposes, specifically those required to comply with Queensland Development Code Mandatory Part 3.5 Construction of Buildings in Flood Hazard Areas.

Feel free to contact Council's Strategic Planner who will be more than happy to provide you with further detail in relation to the zones relative to your land.

For more information in relation the Draft Lockyer Valley Planning Scheme Visit: www.lockyervalley.qld.gov.au/draft-planning-scheme

