



# COUNCIL POLICY

## Flooding in Geurie

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**Clause Number** PDC17/12

**Responsible Officer** Melissa Watkins

**Position** Director Environmental Services

**Branch** City Strategy Services

**Division** Environmental Services

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Document Revision History	
Description	Date
Version 1 Draft Public Exhibition Version	18 January 2017 – 17 February 2017
Version 2 Amended Post-Exhibition (this version)	27 March 2017
<b>Notes</b>	

## **POLICY**

### **PURPOSE**

Flooding of land is a natural event. Historical records across Australia have been used to develop predictive modelling that allows Council and the community to better understand the impacts and location of flooding. Whilst the Geurie urban area and surrounding area has some recorded information and historical data related to flooding and flood events for this area, such information is limited.

This Policy contains important considerations for properties identified as being zoned RU5 Village and R5 Large Lot Residential within the Geurie urban area and surrounding lands that are potentially subject to the impacts of flooding.

This Policy provides specific requirements for development on land classified by Council as flood prone land. Flood prone land in Geurie includes land that is classified as High Hazard Floodway, Low Hazard Flood Fringe or land that may be subject to the potential impacts of stormwater. In the case of land situated in the High Hazard Floodway, the risk of flooding is significant. Any development situated in the High Hazard Floodway is unlikely to be approved by Council.

This Policy provides information to residents and prospective developers where properties are likely to be impacted by flood waters and steps that can be undertaken to mitigate the risk of flooding.

### **BACKGROUND AND RELATED LEGISLATION**

This Policy shall be read in conjunction with the Geurie Flood Study, October 2006 (undertaken by Webb, McKeown & Associates Pty Ltd, for the former Wellington Council).

The purpose of the Flood Study was to determine and understand the impacts of flooding on land and development undertaken in the Geurie urban area and surrounding lands. The overall findings of the Geurie Flood Study resulted in the mapping of flood prone lands for the Geurie urban area and surrounding lands with the preparation of the Wellington Local Environmental Plan 2012. The Wellington LEP 2012 guides the development of land in Geurie.

### **SCOPE**

This Policy applies to development undertaken on flood prone land at Geurie, as defined in Figure 14 of the Geurie Flood Study. This land is zoned RU5 Village or R5 Large Lot Residential under the provisions of the Wellington LEP 2012. Flood Prone Land is defined as any lands inundated as presented in Figure 14 by the 1% Annual Exceedance Probability (AEP) event, inclusive of the areas defined in Figure 14A as included in the Geurie Flood Study.

### **DEFINITIONS**

To assist in interpretation, the following definitions apply:

<b>Term</b>	<b>Definition</b>
<b>Australian Height Datum (AHD)</b>	Australian Height Datum is a national datum level to which all vertical control for mapping is referred. The datum surface is that which passes through mean sea level at thirty tide gauges around the coast of the Australian continent.
<b>Annual Exceedance Probability (AEP)</b>	Annual Exceedance Probability (AEP) refers to the probability of a flood (or storm) event occurring in any year. The probability is expressed as a percentage. For example, a large flood (or storm event) which may be

	<p>calculated to have a 1% chance to occur in any one year, is described as 1% AEP.</p> <p>The 1% AEP is also known as the 1 in 100 year Average Recurrence Interval (ARI), or Q100 event.</p> <p>The Floodplain Development Manual defines AEP as “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 m<sup>3</sup>/s has an AEP of 5%, it means that there is a 5% chance (that is one-in-20 chance) of a 500 m<sup>3</sup>/s or larger events occurring in any one year”.</p>
<b>Flood Planning Level (FPL)</b>	Flood Planning Level (FPL) means the level of a 1% Annual Exceedance Probability (AEP) flood event plus 0.5 metre freeboard.
<b>Flood Planning Area</b>	Flood Planning Area is the area of land below the FPL and thus subject to flood related development controls.

## POLICY

### 1. Flooding at Geurie

Flooding in Geurie is influenced by the catchments areas of the Boori Creek, Geurie Creek, Heatherbrae Creek and Limestone Creek. These combined catchments have an overall area of 47 square kilometres. Each of the creeks form in the adjacent farmland areas situated on the higher slopes to the north, east and west of Geurie.

Within the Geurie urban area, the creeks are conveyed through natural vegetated channels, concrete lined channels and culverts. Given this confluence, the location of road and the railway lines in the Village can impact flood patterns and behaviours.

Flooding within the Geurie Village area is a combination and consequence of surface water from the various creek catchments in addition to water flows generated from within the Village.

In accordance with the NSW Floodplain Development Manual 2005, the Geurie Flood Study, October 2006 has generally classified flooding in the Village area as follows:

#### (a) High Hazard Floodway

High Hazard Floodway is defined as an area of the Village where during a 1% AEP flood event a significant discharge of flood waters is likely to occur. Flood waters within a High Hazard Floodway are also characterised by the movement of water at a depth and velocity that presents significant impacts to property and life, as defined by the NSW Floodplain Development Manual 2005.

A High Hazard Floodway is an area where development is not appropriate having regard to the following:

- The potential for development to re-direct the flow of floodwaters to other lands, which may not have been previously classified as High Hazard Floodway;
- The level of danger to the personal safety of residents and emergency services personnel during a flood event;

- Due to the velocity and depth of floodwaters, able-bodied adults would have significant difficulty in wading to safety; and
- Significant financial loss due to the level of damage sustained during a flood event and the overall cost to the community.

Figure 14 as included in the Geurie Flood Study, October 2006, identifies the High Hazard Floodway.

### **(b) Low Hazard Flood Fringe**

Low Hazard Flood Fringe is defined as the remaining flood prone land in the Village area that is not classified as High Hazard Floodway.

Development undertaken in the area classified as Low Hazard Flood Fringe must meet minimum floor height requirements. This means that any development must have a floor level at least 500 millimetres (mm) above the level of the 1% AEP Flood Event (1 in 100 Year Flood Event) as defined by the Geurie Flood Study, October 2006 or as defined by a flood study prepared by a development proponent and approved by Council.

### **(c) Overland Flow of Floodwater and Stormwater**

Surface water runoff from south-west of Geurie can concentrate and flow into the Geurie Village area in a number of locations. In addition, overland flow of stormwater can also occur from the north. It is important that all existing overland stormwater flow paths within Geurie are maintained in accordance with the Geurie Flood Study, October 2006, to prevent any unnecessary impacts to life or property associated with flooding events.

## **2. Development on Flood Prone Land**

Council as a requirement of development assessment processes under the provisions of the Environmental Planning and Assessment Act, 1979 must consider whether land is classified as flood prone land and the potential flooding hazard to life and property.

However, there is also an onus on development proponents to ensure appropriate background checks and information is gathered from Council and other suitable sources to understand the likely constraints associated with development and whether certain lands may not be suitable for specific proposals having regard to overall constraints. Flooding is a key constraint and matter for consideration in the development assessment process.

This Policy provides information for development proponents as to how Council will assess development proposals within the Geurie urban area and surrounding lands that may be classified as flood prone land, as identified in the Geurie Flood Study, October 2006.

### **(a) High Hazard Floodway**

Any development of land situated on land classified as High Hazard Floodway is unlikely to be approved by Council.

This is due to the classification of High Hazard Floodway as being land where the movement of floodwaters is at a depth and velocity that presents significant impacts to property and life.

However, having regard to the characteristics of the High Hazard Floodway, any development application lodged with Council for consideration must include the provision of a detailed Flood Study and hydraulic

analysis prepared by a suitably qualified hydrological engineer. The Flood Study shall be prepared at the cost of development proponent and lodged with Council at the time of lodgement of a development application.

It should be noted that Council is under no obligation to accept the recommendations as contained in any Flood Study provided to Council by a development proponent.

**(b) Low Hazard Flood Fringe**

For any development undertaken in a Low Hazard Flood Fringe area, the development must have a minimum floor height of 500 mm above the level of the 1% AEP Flood Event. Any development application lodged with Council for development on land classified as Low Hazard Flood Fringe, is required to provide the following information:

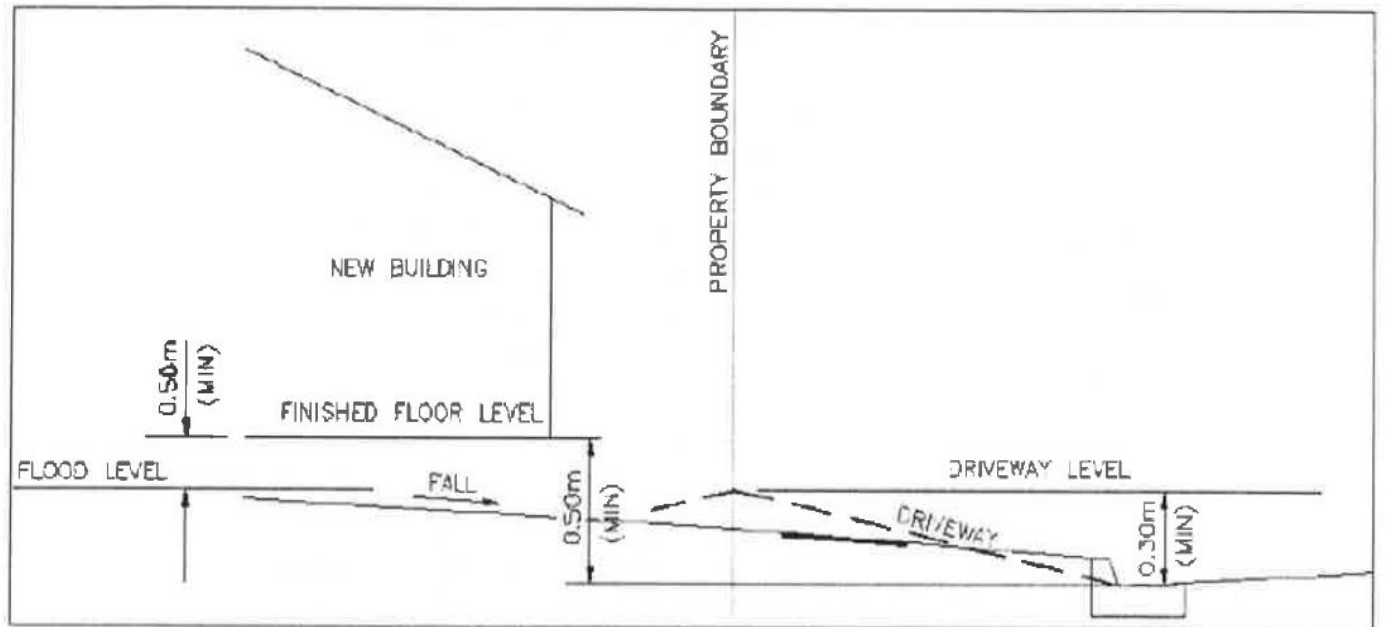
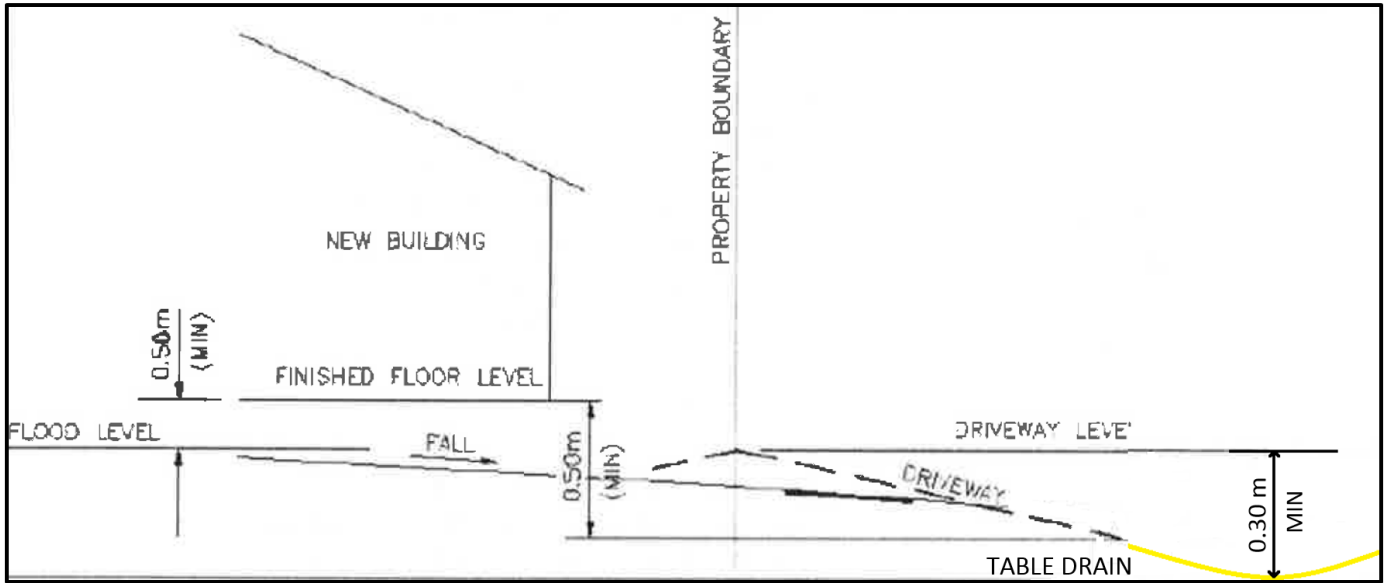
- Site survey including Reduced Levels to Australian Height Datum (AHD). This Plan must be prepared by a Registered Surveyor and be prepared to a recognised scale such as 1:100, with and including a contour plan at intervals of 100 mm.
- Development plans showing the floor height of the development as being at least 500 mm above the level of the 1% AEP Flood Event including details of overland flooding detailed in Figure 14A of the Geurie Flood Study, if applicable.
- Details of any boundary fencing, or internal fencing on the land, having regard to the requirement that any fencing must not obstruct the overland flow of water during a flood event.

**(c) Overland Flow of Floodwater and Stormwater**

It is important that the flow of floodwater and stormwater be maintained during any flooding event. If the flow of floodwater and/or stormwater is impeded for any reason, this may have the effect of impacting other properties or life that are not ordinarily impacted during a particular event.

To maintain the flow of water this Policy recommends a number of measures are adopted for development in the Geurie urban area and surrounding lands as provided below:

- Fencing, including boundary fencing shall be provided in a manner so as to not obstruct the flow of water.
- Fencing, including boundary fencing shall be provided with an open area at the bottom of the fence (adjacent to the ground level) of no less than 500 mm, to allow for the flow of water.
- The 500 mm open area can be provided with netting or another alternative movable component that can be easily opened or moved to allow for the flow of water and debris. Any netting or other suitable component shall be tied or fastened on the downstream side to allow for easy removal prior to, or during a flooding event.
- New driveway levels at the road frontage (allotment boundary) should be raised to minimise the level of water entering the property from the roadway to a minimum of 300 mm to enable the level of the adjacent road water table level, presented in Figure 1 and Figure 2.



**Figure 1.** Format for driveways with fall away from development. (Top: Table Drain, Bottom: Kerb and Gutter)

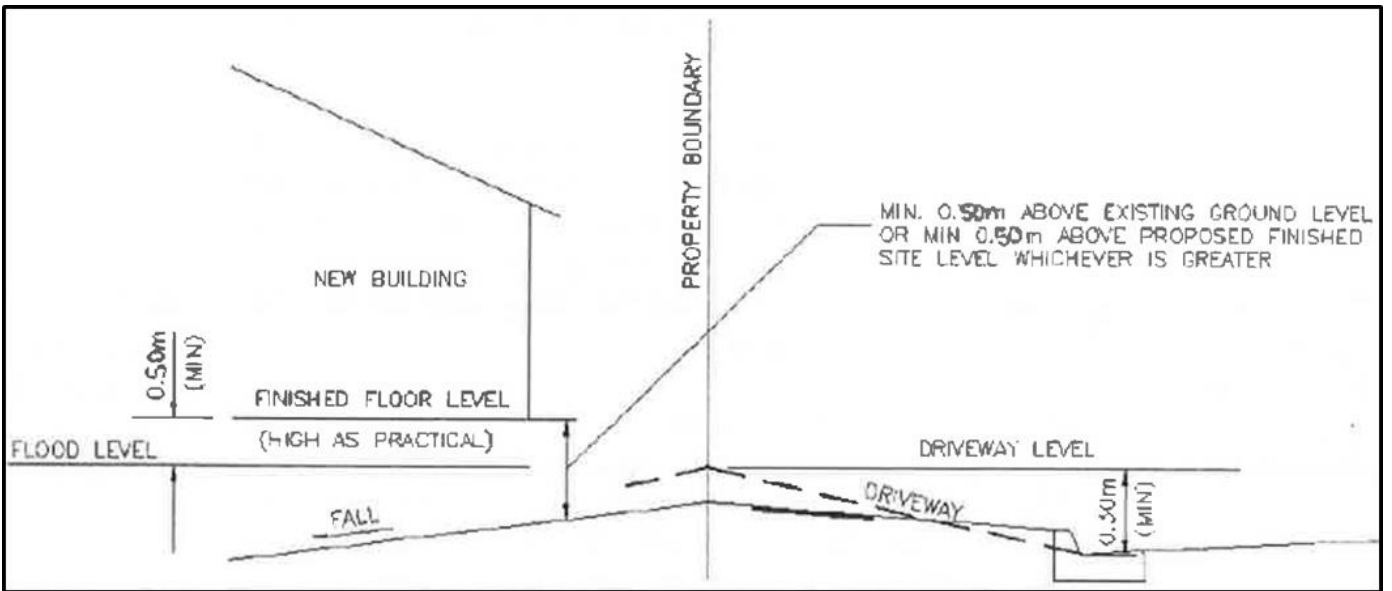
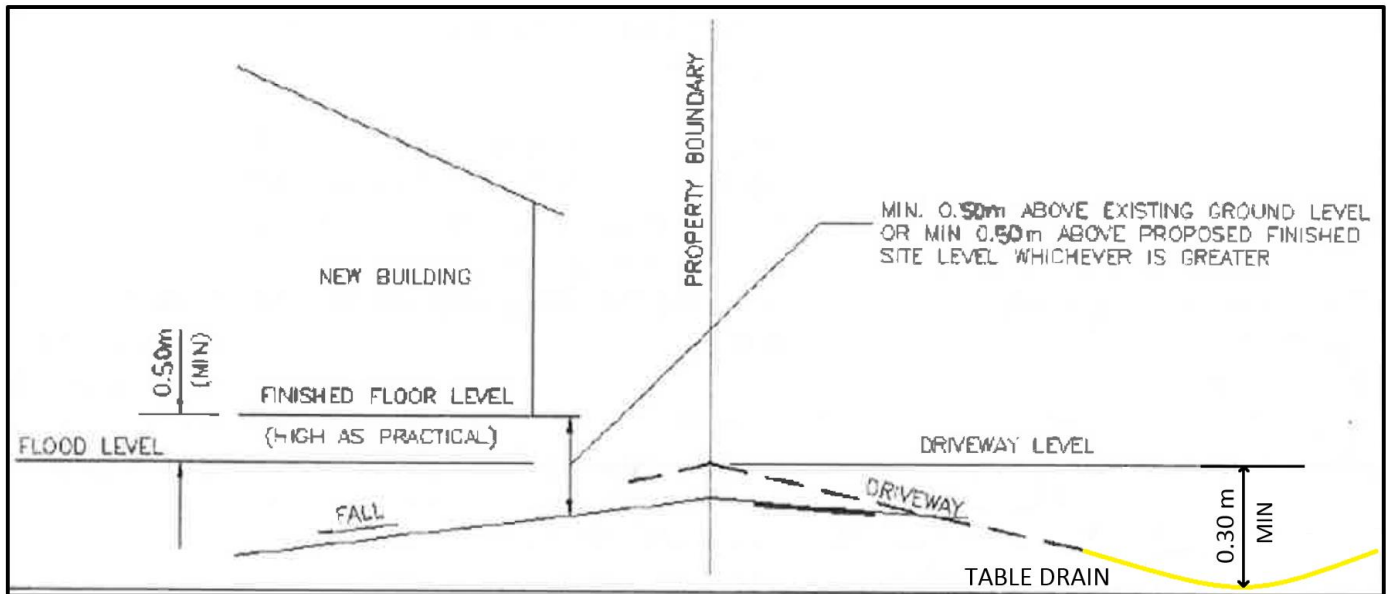


Figure 2. Format for driveways with fall towards from development. (Top: Table Drain, Bottom: Kerb and Gutter)

## RESPONSIBILITIES

The Director Environmental Services is responsible for the enforcement of this Policy.