

NOTE: This Chapter should not be read in isolation. You may need to consider other chapters of this DCP when preparing your application.



CHAPTER G9: DEVELOPMENT ON FLOOD PRONE LAND

Chapter G9: Development on Flood Prone Land

Contents

1	Purpose	3
2	Application	3
3	Context	3
4	Objectives	4
5	Controls	4
	5.1 General.....	4
	5.2 Fill or Excavation on the Floodplain.....	6
	5.3 Subdivision in the Floodplain.....	7
	5.4 Site Specific Flood Related Development Controls	7
	5.4.1 Kangaroo River.....	8
	5.4.2 Broughton Creek	8
	5.4.3 Bomaderry Creek	9
	5.4.4 Lower Shoalhaven River.....	10
	5.4.5 Riverview Road Area	11
	5.4.6 Terara Village	12
	5.4.7 Nowra and Browns Creeks	12
	5.4.8 Currambene and Moona Moona Creeks.....	13
	5.4.9 St Georges Basin	14
	5.4.10 Conjola Lake.....	15
	5.4.11 Burrill Lake.....	16
	5.4.12 Tabourie Lake.....	16
6	Advisory Information	17
	6.1 Other legislation or policies you may need to check.....	17
	Schedule 1 – Land Use Categories	18
	Schedule 2 – Flood Related Development Controls – Generic.....	26

Figures

Figure 1: Figure for minor development diagrams21

Amendment history

Version Number	Date Adopted by Council	Commencement Date	Amendment Type
1	14 October 2014	22 October 2014	New
2	23 June 2015	1 July 2015	Amendment
3	7 November 2016	30 November 2016	Amendment
4	6 November 2018	14 December 2018	Amendment

1 Purpose

The purpose of this Chapter is to provide information and **development** controls needed to prepare and assess development applications on **flood prone land**.

2 Application

This Chapter applies to all **development** on **flood prone land** within Shoalhaven.

Advisory Note: In addition to the provisions outlined in this Chapter, you must refer to the supporting documents/checklists/maps:

- Supporting Document 1: Chapter G9 - Guidelines for Development on Flood Prone Land.
- Supporting Maps: Site Specific Areas.
- [Council's online interactive flood mapping portal](#).

Flood prone land is all land at or below the **Probable Maximum Flood** level and is described in detail in Supporting Document 1: Chapter G9 - Guidelines for Development on Flood Prone Land under the heading Flood Planning Concepts in Schedule 5.

There are a number of catchments within the Shoalhaven that have not been subject of a detailed **flood study**. Any works proposed within such an area may therefore need to be accompanied by a **flood assessment report** – refer to Supporting Document 1: Chapter G9 – Guidelines for Development on Flood Prone Land for more information. It is noted that if a **flood assessment report** identifies land to be at or below the **Flood Planning Level (FPL)** then Clause 7.3 of Shoalhaven LEP 2014 will also apply to development on that land. **FPL** is defined in the **DCP Dictionary** and Shoalhaven LEP 2014 Dictionary.

In cases where a site is classified as partially **flood affected**, it is strongly recommended to only consider **development** on the **flood free** portion of the **allotment**.

3 Context

The NSW Flood Prone Land Policy provides a framework for **Council** to manage **flood prone land**. **Council** is required under the Environmental Planning and Assessment Act 1979, and in various **environmental planning instruments** including the Shoalhaven LEP 2014, to ensure that due regard is given to the effect of natural hazards upon **development**.

4 Objectives

The objectives are to:

- i. Reduce risk to life and property resulting from floods.
- ii. Ensure that the impacts of the full range of flood sizes up to and including the probable maximum flood (PMF) are considered when assessing development on flood prone land.
- iii. Ensure that the impact of climate change is considered when assessing development on flood prone land.
- iv. Ensure the future use of flood prone land does not cause undue distress to individuals or unduly increase potential flood liability to individuals or the community.
- v. Incorporate site specific floodplain management recommendations from local floodplain risk management plans into Council's overall planning framework.

5 Controls

Note: You must comply with Supporting Document 1: Chapter G9 – Guidelines for Development on Flood Prone Land when preparing your development application.

5.1 General

The specific objectives are to:

- i. Minimise risk to life and damage to property by controlling development on flood prone land;
- ii. Ensure the impacts of the full range of flood sizes up to and including the PMF are considered when assessing development on flood prone land within the Shoalhaven;
- iii. Ensure that development does not have a significant impact on flood behaviour, people's safety, surrounding properties and structures, and the natural environment;
- iv. Ensure that the effects of climate change are considered when assessing development on flood prone land within the Shoalhaven;
- v. Ensure that development on the floodplain is consistent with the NSW Flood Prone Land Policy and NSW Floodplain Development Manual;
- vi. Ensure that developers and the community are conscious of the potential flood hazard and consequent risk associated with the use and development of land within the floodplain;
- vii. Protect the integrity of floodplains and floodways, including riparian vegetation, fluvial geomorphologic environmental processes and water quality;
- viii. Ensure that all land uses and essential services are appropriately sited and designed in recognition of all potential floods; and

Chapter G9: Development on Flood Prone Land

- ix. Ensure that **development** on **flood prone land** does not place an unacceptable financial burden on **landowners** or the **community**.

Performance Criteria	Acceptable Solutions
<p>P1 Development or work on flood prone land will meet the following:</p> <ul style="list-style-type: none"> • The development will not increase the risk to life or safety of persons during a flood event on the development site and adjoining land. • The development or work will not unduly restrict the flow behaviour of floodwaters. • The development or work will not unduly increase the level or flow of floodwaters or stormwater runoff on land in the vicinity. • The development or work will not exacerbate the adverse consequences of floodwaters flowing on the land with regard to erosion, siltation and destruction of vegetation. • The structural characteristics of any building or work that are the subject of the application are capable of withstanding flooding in accordance with the requirements of the Council. • The development will not become unsafe during floods or result in moving debris that potentially threatens the safety of people or the integrity of structures. • Potential damage due to inundation of proposed buildings and structures is minimised. • The development will not obstruct escape routes for both people and stock in the event of a flood. • The development will not unduly increase dependency on emergency services. 	<p>A1.1 The development satisfies the requirements as shown in the planning matrix at Schedule 2 including climate change considerations; and</p> <p>A1.2 Buildings and structures are constructed in accordance with the flood proofing guidelines (see Supporting Document 1: Chapter G9 – Guidelines for Development on Flood Prone Land); and</p> <p>A1.3 Buildings and structures are constructed in accordance with the Building Code of Australia – ABCB Standard for Construction of Buildings in Flood Hazard Areas. The controls in this Chapter are to be used in instances where this Chapter specifies more stringent controls; and; Buildings and structures are designed to withstand the forces of flood waters in accordance with best practice engineering standards; or</p> <p>A1.4 Where appropriate, structures are designed to collapse under the force of water to not obstruct the flood flow, but are sufficiently secured to not become floating debris and to not endanger people or animals; or</p> <p>A1.5 Openings in structures such as fences or the like will be provided below the flood planning level to allow free flow of water; and where relevant;</p> <p>A1.6 Building foundations are designed by a suitably qualified geotechnical engineer to be suitable for grounds with potentially reduced bearing capacity under flooding conditions; and</p> <p>A1.7 The development complies with ecological sustainable development principles, taking into account floodplain ecology and integrity; and</p>

Chapter G9: Development on Flood Prone Land

- Interaction of **flooding** from all possible sources has been taken into account in assessing the proposed **development** against **risks** to life and property resulting from any adverse **hydraulic** impacts.
 - The **development** will not adversely affect the integrity of **floodplains** and **floodways**, including riparian **vegetation**, **fluvial geomorphologic** environmental processes and water quality.
- A1.8 A report demonstrating that all **performance criteria** have been met is supplied with the development application.

5.2 Fill or Excavation on the Floodplain

The specific **objective** is to:

- i. Ensure that **filling** or **excavation** within the **floodplain** does not have a significant impact on **flood** behaviour, **conveyance** and storage capacity, as well as surrounding properties or **structures** and the environment in the specific area where the **development** is proposed.

Performance Criteria	Acceptable Solutions
<p>P2 Filling or excavation on flood prone land will meet the following:</p> <ul style="list-style-type: none"> • High hazard floodway areas are kept free of fill and/or obstructions. • The proposed fill or excavation will not unduly restrict the flow behaviour of floodwaters. • The proposed fill or excavation will not unduly increase the level or flow of floodwaters or stormwater runoff on land in the vicinity, including adjoining land. • The proposed fill or excavation will not exacerbate erosion, siltation and destruction of vegetation caused by floodwaters flowing on the land. • The proposed fill or excavation will not be carried out on flood prone land if sufficient flood free area is available for development within the subject property. 	<p>A2.1 The development satisfies the requirements as shown in the planning matrix at Schedule 2.</p> <p>A2.2 The proposed fill volume occupies less than 1% of the 2050 20%, 5% and 1% AEP flood volume on the development site and does not create a depth exceeding 1 metre above natural ground level or require more than 250 cubic metres of filling materials.</p> <p>A2.3 The proposed fill and excavation does not adversely affect neighbouring properties or the overall flood behaviour and flood storage volume.</p> <p>A2.4 The proposed fill is used only for the purpose of filling a local depression beneath the confines of a building within an existing residential/ commercial area.</p>

Chapter G9: Development on Flood Prone Land

- The proposed **excavation** does not create new **habitable rooms**, non-habitable storage areas or **carparks** with floor levels below the **existing ground level**.
-

5.3 Subdivision in the Floodplain

The specific **objectives** are to:

- i. Ensure that the creation of new lots does not increase potential **flood risks** to land **owners** or the **community**.
- ii. Ensure that new lots that are created on the **floodplain** are suitable for, and capable of, being developed for their intended future use.

Performance Criteria	Acceptable Solutions
P3.1 The development (subdivision and intended future use) is a suitable land use, and is adequately designed, for the defined hazard/hydraulic category.	A3.1 The development (subdivision and intended future use) satisfies the requirements as shown in the planning matrix at Schedule 2; and
P3.2 The proposed subdivision will not create new lots that are affected by a high hazard area, or floodway in today's flood conditions or in climate change conditions up to the year 2100.	A3.2 Flood conditions for the year 2100, which include the respective sea level rise projection, are used.
P3.3 The proposed subdivision will not increase the potential population density in any areas (flood prone or flood free) with restricted evacuation access	

5.4 Site Specific Flood Related Development Controls

Notes: In the event of an inconsistency between site specific controls and generic controls within this Chapter, the site specific controls prevail to the extent of the inconsistency.

The individual management plan areas to which this Section applies are shown on the Supporting Maps.

This section provides site specific **flood** related development controls as recommended by **Council** adopted **Floodplain Risk Management Plans (FRMP)** that have been prepared for individual catchments consistent with the NSW Floodplain Development Manual.

Chapter G9: Development on Flood Prone Land

Information for specific areas will be added as **Floodplain Risk Management Plans** are completed.

5.4.1 Kangaroo River

The Kangaroo River **Floodplain Risk Management Study and Plan** was adopted 12 April 2016. Please refer to Supporting Map 1.

Site specific **flood** related development controls:

Location / Type of Development	Specific Controls
<p>Buildings and activities requiring special evacuation consideration</p> <p>AND</p> <p>Critical infrastructure assets / potentially polluting activities</p>	<ul style="list-style-type: none"> To be located outside the floodplain, with a minimum floor at or above the PMF.

5.4.2 Broughton Creek

The Broughton Creek **Floodplain Risk Management Study and Plan** was adopted 2012. Please refer to Supporting Map 2.

Site specific **flood** related development controls:

Location / Type of Development	Specific Controls
<p>High Hazard areas</p>	<ul style="list-style-type: none"> No intensification of development - no dual occupancies or subdivisions to be permitted in high hazard flood zones which would increase potential risk to life and demands on emergency services.
<p>All new development</p>	<ul style="list-style-type: none"> Emergency plans - a flood emergency response and evacuation plan to be mandatory for all new development. Such plans would be required to demonstrate understanding of flood warning, emergency response procedures, effective evacuation routes and post-flood recovery considerations.

5.4.3 Bomaderry Creek

The Bomaderry Creek **Floodplain Risk Management Study and Plan** was adopted 12 April 2016. Please refer to Supporting Map 3.

Site specific **flood** related development controls:

Location / Type of Development	Specific Controls
Car parks	<ul style="list-style-type: none"> • Entrances to below ground car parks are to be no lower than the flood planning level. • Above ground car parks are to be designed to take into account vehicle stability up to the PMF event. Vehicle stability can be assessed in accordance with the 2005 NSW Floodplain Development Manual. • The Manual suggests three options: <ul style="list-style-type: none"> ○ The flood planning level of the car park is sufficient to prevent the instability of vehicles due to flooding; ○ The car park is flood proofed to prevent the instability of vehicles due to flooding; and • Bollards are provided to prevent cars being swept away.
Properties with long duration flooding	<ul style="list-style-type: none"> • Prepare Flood Evacuation Plans.
Hazardous and valuable goods, and animal refuges	<ul style="list-style-type: none"> • Storage is to be provided at the flood planning level.
All development	<ul style="list-style-type: none"> • Any portion of the building below the flood planning level is to be flood proofed.

5.4.4 Lower Shoalhaven River

The Lower Shoalhaven River [Floodplain Risk Management Plan](#) was adopted in 2007, with a Climate Change Assessment conducted in 2011. Please refer to Supporting Map 5.

Site specific [flood](#) related development controls:

Location / Type of Development	Specific Controls
Hay Avenue. Shoalhaven Heads	<ul style="list-style-type: none"> No intensification of development - no dual occupancies or subdivisions to be permitted in high hazard flood zones which would increase potential risk to life and demands on emergency services.
Greenwell Point	<ul style="list-style-type: none"> Any further expansion or new development beyond the current residential zoning will not be permitted.
Industrial Development at Bomaderry	<ul style="list-style-type: none"> The potential hydraulic effects of any future construction works shall be minimised through locating them in the “shadow” of other buildings or away from the main flow paths where possible. Any proposed works must be designed and located to minimise any increase in flood damages to other users/occupiers of the floodplain. A full hydraulic assessment will be required prior to any future development or redevelopment to assess the potential impacts upon flooding.
Bomaderry 22, 64 Bolong Road	<ul style="list-style-type: none"> House raising by 3m (one floor) should be explored as part of any new development application for these properties.
Culburra Beach/ Orient Point 3 Raglan Street 41 Prince Edward Avenue	<ul style="list-style-type: none"> House raising by 3m (one floor) should be explored as part of any new development application for these properties.
All Lower Shoalhaven Foreshore areas	<ul style="list-style-type: none"> A minimum setback should be applied to all new development on the foreshore and tributary creeks of the Shoalhaven and Crookhaven Rivers which is consistent with requirements for controlled actions under the <i>Water Management Act 2000</i> in the associated <i>Guidelines for riparian corridors on waterfront land</i> which specifies the requirement of a permit for development within 40 metres of the top of bank or shoreline.
Flood Mitigation Drains	<ul style="list-style-type: none"> Inappropriate enlargement of flood mitigation drains may cause removal of natural wetlands and cause exposure of acid sulphate

Chapter G9: Development on Flood Prone Land

	soils. Local landowner modifications to the existing mitigation drains will require Council's written approval.
--	---

5.4.5 Riverview Road Area

The Riverview Road Area Floodplain Risk Management Plan was adopted in 2002. Please refer to Supporting Map 5.

Site specific flood related development controls:

Location / Type of Development	Specific Controls
All of Riverview Road Area FRMP Study Area	<ul style="list-style-type: none"> No new subdivision approvals will be granted as it would increase the demand on the rescue services and the risk to life. The minimum required floor level for infill development and reconstruction is the 1 in 100 year pre levee flood level plus a freeboard of 0.5m for habitable rooms.
New residential buildings where approved in accordance with the zoning requirements	<ul style="list-style-type: none"> Structural soundness of completed works to withstand water and debris damage up to the 0.2% AEP (1 in 500 year) event is to be certified by a suitably qualified structural engineer. Owners must have measures in place to enable them to self evacuate to not place additional burden on Emergency Services
New residential buildings within: <ul style="list-style-type: none"> Riverview Road, Elia Avenue Lyrebird Drive subdivision Lot 7 DP809132 Lot 1 DP1053438 Lot 2 DP1053438 Lot 6 DP538956 Lot 1 DP449102 All vacant land not already subdivided.	<ul style="list-style-type: none"> No Dual Occupancies or subdivisions will be permitted.

5.4.6 Terara Village

The Terara Village Floodplain Risk Management Plan was adopted in 2002. Please refer to Supporting Map 6.

Site specific flood related development controls:

Location / Type of Development	Specific Controls
All of Terara Village FRMP study area	<ul style="list-style-type: none"> • Vacant lots cannot be developed for residential buildings unless Council is satisfied that the dwelling house is essential for the proper and efficient use of the land for agriculture or turf farming. • Development in a high hazard floodway will only be permitted if it can be shown that there is no other viable alternative. Further considerations would then need to be made regarding the specific location of the development. • The minimum required floor level for infill development and reconstruction in the Terara village area is the 1 in 100 year pre levee flood level plus a freeboard of 0.5 m for habitable rooms.
New residential buildings where approved in conjunction with agricultural use	<ul style="list-style-type: none"> • Structural soundness of completed works to withstand water and debris damage up to the 0.2% AEP (1 in 500 year) event is to be certified by a suitably qualified structural engineer. • Owners must have measures in place to enable them to self evacuate so as to not place additional burden on Emergency Services

5.4.7 Nowra and Browns Creeks

The Nowra and Browns Creeks Floodplain Risk Management Study and Plan was adopted 12 April 2016. Please refer to Supporting Map 7.

Site specific flood related development controls:

Location / Type of Development	Specific Controls
Car parks	<ul style="list-style-type: none"> • Entrances to below ground car parks are to be no lower than the flood planning level. • Above ground car parks are to be designed to take into account vehicle stability up to the PMF event. Vehicle stability can be assessed in accordance with the 2005 NSW Floodplain Development Manual. • The Manual suggests three options:

Chapter G9: Development on Flood Prone Land

	<ul style="list-style-type: none"> ○ The flood planning level of the car park is sufficient to prevent the instability of vehicles due to flooding; ○ The car park is flood proofed to prevent the instability of vehicles due to flooding; and ● Bollards are provided to prevent cars being swept away.
Structural Soundness, control four	<ul style="list-style-type: none"> ● Clarified or removed as goes against first three controls.
Properties with long duration flooding	<ul style="list-style-type: none"> ● Prepare Flood Evacuation Plans.
Hazardous and valuable goods, and animal refuges	<ul style="list-style-type: none"> ● Storage is to be provided at the flood planning level.
All development	<ul style="list-style-type: none"> ● Any portion of the building below the flood planning level is to be flood proofed.

5.4.8 Currumbene and Moona Moona Creeks

The Currumbene and Moona Moona Creeks Floodplain Risk Management Study and Plan was adopted 12 April 2016. Please refer to Supporting Map 8a and 8b.

Site specific flood related development controls:

Location / Type of Development	Specific Controls
Jervis Bay Cabins and Camping (55 Goodland Rd Wollamia) Jervis Bay Caravan Park (785 Woollamia Rd Woollamia) Paperbark Camp Resort (571 Woollamia Rd Woollamia) Streamside Street Edendale St Edendale St East	<ul style="list-style-type: none"> ● All properties require a flood emergency evacuation plan.

5.4.9 St Georges Basin

The St Georges Basin **Floodplain Risk Management Plan** was adopted 24th October 2006. Please refer to Supporting Map 9.

Site specific **flood** related development controls:

Location / Type of Development	Specific Controls								
St Georges Basin and tributary creeks foreshore areas	<ul style="list-style-type: none"> A minimum setback from the top bank or shore of a waterway shall apply for new development based on the following waterway categories (as mapped on the SLEP 2014 Riparian Land and Watercourses Map): <table border="1" data-bbox="568 725 1347 1061"> <tbody> <tr> <td>Category 1</td> <td>30 metres</td> </tr> <tr> <td>Category 2</td> <td>20 metres</td> </tr> <tr> <td>Category 3</td> <td>10 metres</td> </tr> <tr> <td>Estuaries, wetlands and any parts of rivers influenced by tidal waters</td> <td>40 metres</td> </tr> </tbody> </table> <p>Note: A Controlled Activity Approval is required from NSW Department of Primary Industries – Water for certain activities on waterfront land (defined as 40 metres from the top bank or shore). Certain exemptions also apply and these are found in Schedule 5 of the Water Management (General) Regulation 2011.</p>	Category 1	30 metres	Category 2	20 metres	Category 3	10 metres	Estuaries, wetlands and any parts of rivers influenced by tidal waters	40 metres
Category 1	30 metres								
Category 2	20 metres								
Category 3	10 metres								
Estuaries, wetlands and any parts of rivers influenced by tidal waters	40 metres								
The Nebraska Estate	<ul style="list-style-type: none"> Only minimal increase in development and population will be permitted in this area. 								
Lorilyn Avenue properties	<ul style="list-style-type: none"> An additional freeboard of 0.3m on top of the flood planning level is to be enforced to new development to account for wind wave conditions. 								
Lot 1 DP 1120892 - 9 Fisherman Rd Home Creek Lot 89 DP 247696 - 41 Roulstone Crescent Sanctuary Point Lot 23 DP 7984 - 20 Kallaroo Rd Erowal Bay Lot 5 DP 21261 – 5 Wunda Ave Sussex Inlet	<ul style="list-style-type: none"> House raising by 3m (one floor) should be explored as part of any new development application for these properties. 								

Chapter G9: Development on Flood Prone Land

<p>Lot 9 DP 21261 - 13 Wunda Ave Sussex Inlet</p> <p>Lot 143 DP 21038 - 52 Ellmoos Ave Sussex Inlet</p>	
<p>Services infrastructure and utilities, sports field amenities or similar in high hazard floodway areas</p>	<ul style="list-style-type: none"> • These will only be permitted if it can be shown that there is no other viable alternative. A merit based assessment is to be undertaken and if approved, conditions to minimise risk to life, property and the environment will be imposed.

5.4.10 Conjola Lake

The Conjola Lake Floodplain Risk Management Study and Plan was adopted 26 March 2013. Please refer to Supporting Map 10.

Site specific flood related development controls:

Location / Type of Development	Specific Controls
<p>High Hazard areas</p>	<ul style="list-style-type: none"> • No intensification of development - no dual occupancies or subdivisions to be permitted in high hazard flood zones which would increase potential risk to life and demands on emergency services.
<p>All areas within 2050 flood planning area</p>	<ul style="list-style-type: none"> • No filling – a moratorium on filling is proposed until a long term climate change adaptation strategy is established.
<p>All new development</p>	<ul style="list-style-type: none"> • Emergency plans - a flood emergency response and evacuation plan to be mandatory for all new development. Such plans would be required to demonstrate understanding of flood warning, emergency response procedures, effective evacuation routes and post-flood recovery considerations.

5.4.11 Burrill Lake

The Burrill Lake Floodplain Risk Management Study and Plan was adopted 26 March 2013. Please refer to Supporting Map 11.

Site specific flood related development controls:

Location / Type of Development	Specific Controls
High Hazard areas	<ul style="list-style-type: none"> No intensification of development - no dual occupancies or subdivisions to be permitted in high hazard flood zones which would increase potential risk to life and demands on emergency services.
All areas within 2050 flood planning area	<ul style="list-style-type: none"> No filling – a moratorium on filling is proposed until a long term climate change adaptation strategy is established.
All new development	<ul style="list-style-type: none"> Emergency plans - a flood emergency response and evacuation plan to be mandatory for all new development. Such plans would be required to demonstrate understanding of flood warning, emergency response procedures, effective evacuation routes and post-flood recovery considerations.

5.4.12 Tabourie Lake

The Tabourie Lake Floodplain Risk Management Study and Plan was adopted 12 April 2016. Please refer to Supporting Map 12.

Site specific flood related development controls:

Location / Type of Development	Specific Controls
All new development	<ul style="list-style-type: none"> Prepare flood evacuation plan.
20 River Rd Tabourie Lake	<ul style="list-style-type: none"> Applications for new/continuation of current development as a Childcare Centre is to be reconsidered to ensure it is in line with the current requirements of this chapter of the DCP.
Hazardous and valuable goods, and animal refuges	<ul style="list-style-type: none"> Storage is to be provided at the flood planning level.

6 Advisory Information

6.1 Other legislation or policies you may need to check

Note: This section is not exclusive and you may be required to consider other legislation, policies and other documents with your application

Council Policies & Guidelines	<ul style="list-style-type: none">• Supporting Document 1: Chapter G9 – Guidelines for Development on Flood Prone Land• Engineering Guidelines• Site Specific Floodplain Risk Management Plans• Community Consultation Policy for Development Applications (Including Subdivision) and the Formulation of Development Guidelines and Policies
External Policies & Guidelines	<ul style="list-style-type: none">• NSW Flood Prone Land Policy 1984• NSW Floodplain Development Manual 2005 and other associated Guidelines• NSW Coastal Planning Guideline: Adapting to Sea Level Rise 2010• NSW Sea Level Rise Policy Statement 2009• Building Code of Australia - Construction of Buildings in Flood Hazard Areas – Standard 2012
Legislation	<ul style="list-style-type: none">• Nil

Schedule 1 – Land Use Categories

The **development** purpose categories and land use types below are not exhaustive, but indicative only. **Where development does not fit within the categories, assessment will be undertaken based on merit in accordance with the NSW Floodplain Development Manual provisions.** Council will determine, based on the documentation provided to Council, which **development** purpose and land use category the proposal fits into.

The **development** purpose categories are based on sensitivity to **flood risk** and are different to terms used in planning legislation. The land use types listed are examples of the possible land use within each **development** purpose category. Definitions of these land use types are included in the Standard Instrument (Local Environmental Plans) Order 2006. They are not an exhaustive list and other activities such as stand-alone **drainage** applications should also comply with this Chapter.

	Development Purpose	Land Use Type
A(I)	Single Residential/ Habitable Buildings	New Dwelling, Dwelling house, Exhibition home, Home business, Home industry, Home occupation, Rural worker's dwelling and the like...
A(II)	Other Residential/ Habitable Buildings	Attached dwelling, Bed and breakfast accommodation, Canal estate development, Dual occupancy, Exhibition village, Farm stay accommodation, Home-based child care, Hostel, Hotel or motel accommodation, Multi dwelling housing, Residential flat building, Secondary dwelling, Semi-detached dwelling, Serviced apartment, Shop top housing, Tourist and visitor accommodation and the like...
B	Carpark	Stand-alone car park, ancillary car park and the like...
C	Commercial/ Industrial/ Agricultural Buildings/ Retail	Agricultural produce industry, Agriculture, Airstrip, Amusement centre, Animal boarding or training establishment, Brothel, Bulky goods premises, Business Premises, Cellar door premises, Charter and tourism boating facility, Crematorium, Dairy (pasture-based), Depot, Entertainment facility, Environmental facility; Farm building, Food and drink premises, Freight transport facility, Function centre, Funeral chapel, Funeral home, Health consulting rooms, Heavy industry, Highway service centre, Industrial retail outlet, Industry; Information and education facility, Kiosk, Landscape and garden supplies, Light industry, Livestock processing industry, Marina, Markets, Medical centre, Mortuary, Neighbourhood shop, Nightclub, Office premises, Passenger transport facility, Place of public entertainment, Place of public worship, Pub, Public administration building, Recreation facility, Registered club, Research station, Restaurant, Restricted dairy, Restriction facilities, Retail Premises, Rural industry, Sawmill or

Chapter G9: Development on Flood Prone Land

		log processing works, Self-storage units, Sex service premises, Shop, Stock and sale yard, Storage premises, Take away food and drink premises, Timber and building supplies, Transport depot, Vehicle sales or hire premises, Veterinary hospital, Warehouse or distribution centre, and the like...
D	Subdivision	Residential subdivision, commercial subdivision and the like...
E	Earthworks	Extractive industry, Mining, Road, drainage works and the like...
F	Resource Management/ Agriculture/ Recreational Activities	Aquaculture, Cemetery, Environmental Protection Works, Extensive agriculture, Feedlot, Forestry, Horticulture, Intensive livestock agriculture, Intensive plant agriculture, Natural water-based aquaculture, Open Space, Park, Pond-based aquaculture, Recreation area, Tank-based aquaculture, Turf farming.
G	Critical Infrastructure Assets/ Potentially Polluting Activities	Air transport facility, Airport, Biosolids treatment facility; Electricity generating works, Hazardous industry, Hazardous storage establishment, Liquid fuel depot, Offensive industry; Offensive storage establishment; Public utility undertaking, Resource recovery facility, Service station, Sewage treatment plant, Sewerage system, Telecommunications facility, Waste disposal facility, Waste management facility, Waste or resource management facility, Waste or resource transfer station, Water recycling facility, Water reticulation system, Water storage facility, Water treatment facility.
H	Buildings and activities requiring special evacuation consideration	Child care centre, Community facility, Educational establishment, Emergency services facility, Health services facility, Hospital, Residential care facility, Schools, Seniors housing.
I	Minor Development	<p>Residential</p> <p>A) Minor additions:</p> <p>(i) <i>Urban and rural residential dwelling:</i></p> <p>A cumulative total of habitable additions (since 1988) to an existing dwelling of no more than 50m² below the flood planning level. The addition is to be at or above the originally approved habitable floor level.</p> <p>Note: Additions are a physical external addition or extension to an existing dwelling. See diagrams at the end of this Schedule.</p> <p>Additions which are non-habitable need to meet the requirements of Section 4, 5 and 6.</p> <p>or</p> <p>A cumulative total floor area including all habitable and non-habitable areas on all storeys of the dwelling of 300m² (but with no more than a cumulative total habitable</p>

		<p>additions (since 1988) of 50m² below the flood planning level), whichever is the larger area;</p> <p>(ii) <i>Dwelling associated with a bona fide large rural enterprise such as dairying:</i></p> <p>No more than a cumulative total addition (since 1988) of 100m².</p> <p>B) Minor alteration:</p> <p>Alterations to an existing dwelling comprising modifications to less than 40% of the internal and/or external walls (measured in linear metres) or 30 lineal metres whichever is the greater. Modifications shall include removal of existing walls and the installation of windows, doors or other openings.</p> <p>Note: Alterations refer to physical changes to the internal building structure. Alterations do not allow habitable areas to be increased. The percentage change is to be calculated from the original total floor area being altered. See diagrams at the end of this Schedule.</p> <p>C) Change of use:</p> <p>A cumulative total of changes from non-habitable to habitable areas (since 1988) to an existing dwelling of no more than 50m² below the flood planning level. Additional habitable areas must be at the originally approved habitable floor level or higher.</p> <p>Note: Change of use refers to changing an existing non-habitable area to a habitable area. No changes to the physical structure would occur. See diagrams at the end of this Schedule.</p> <p>To be eligible to seek approval as minor development, all of the above criteria must be met AND the cumulative total change for A, B and C, must not exceed 50m².</p> <p>Other Development</p> <p>A cumulative total addition below the flood planning level to the existing premises (since 1988) of not more than 10% of the existing floor area. The addition is to be at or above the originally approved habitable floor level.</p> <p>Any development activities greater than those determined above shall be considered as major or new development.</p> <p>Any extension to existing structures, that connect additional existing structures to the former with the result of one larger building, are considered as major or new development.</p>
J	Ancillary Structures	Advertising structure, Boat launching ramp, Boat repair facility, Boat shed, Some Fences, Garage, Jetty, Mooring, Pools, Roadside stall, Signage; Temporary structure, Water recreation

Chapter G9: Development on Flood Prone Land

		structure.
K	Events	i.e. music or art festival

The below diagrams are provided to demonstrate the different types of minor development, which include additions, alterations and change of use. They are not to scale.

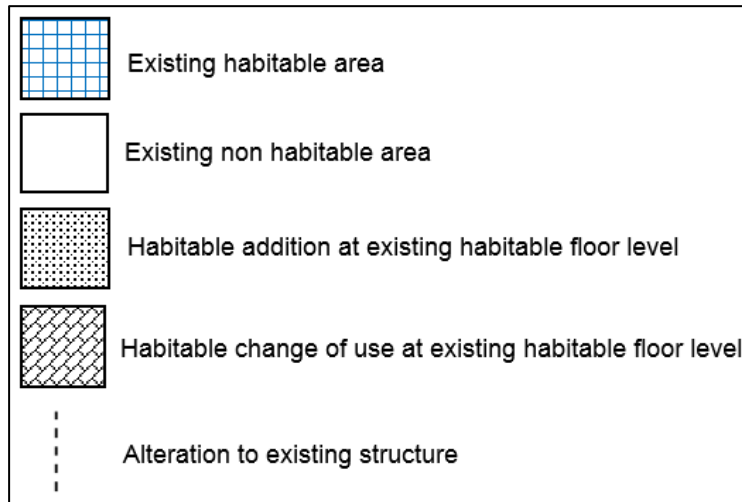
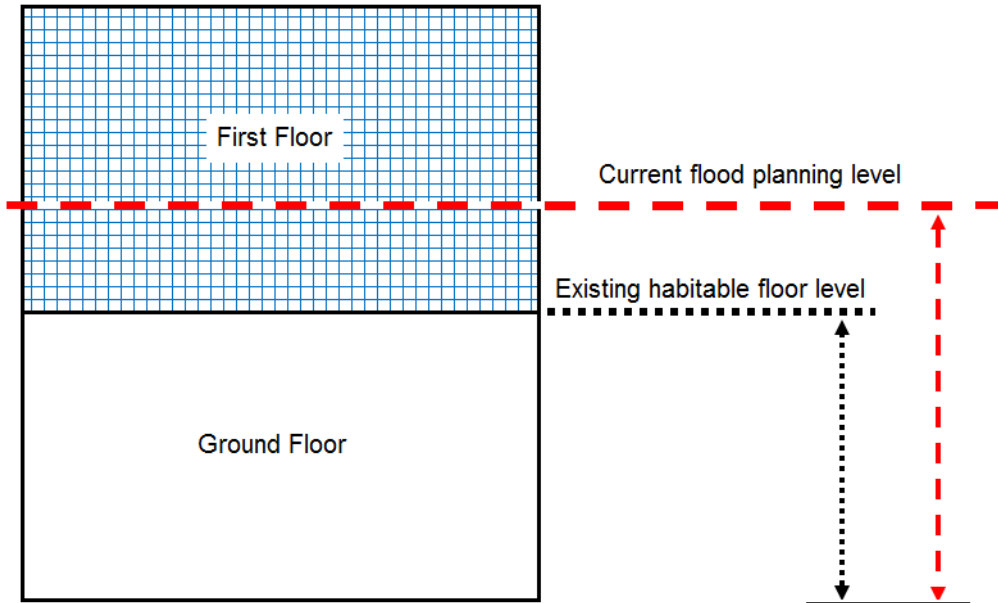


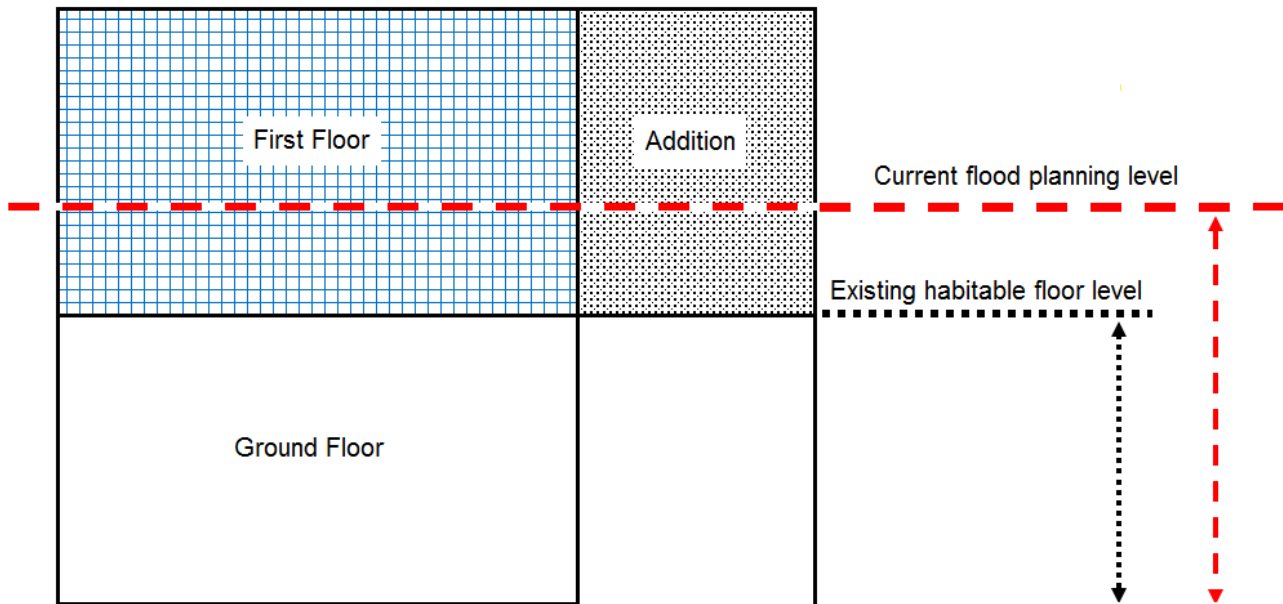
Figure 1: Figure for minor development diagrams

ADDITIONS

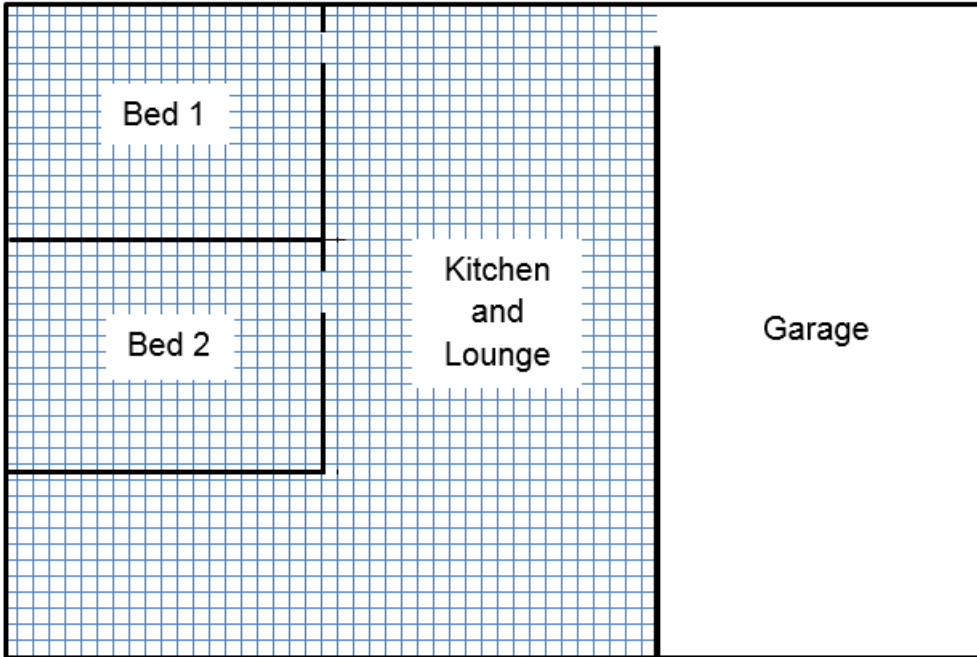
Example 1 - Existing building (cross section view)



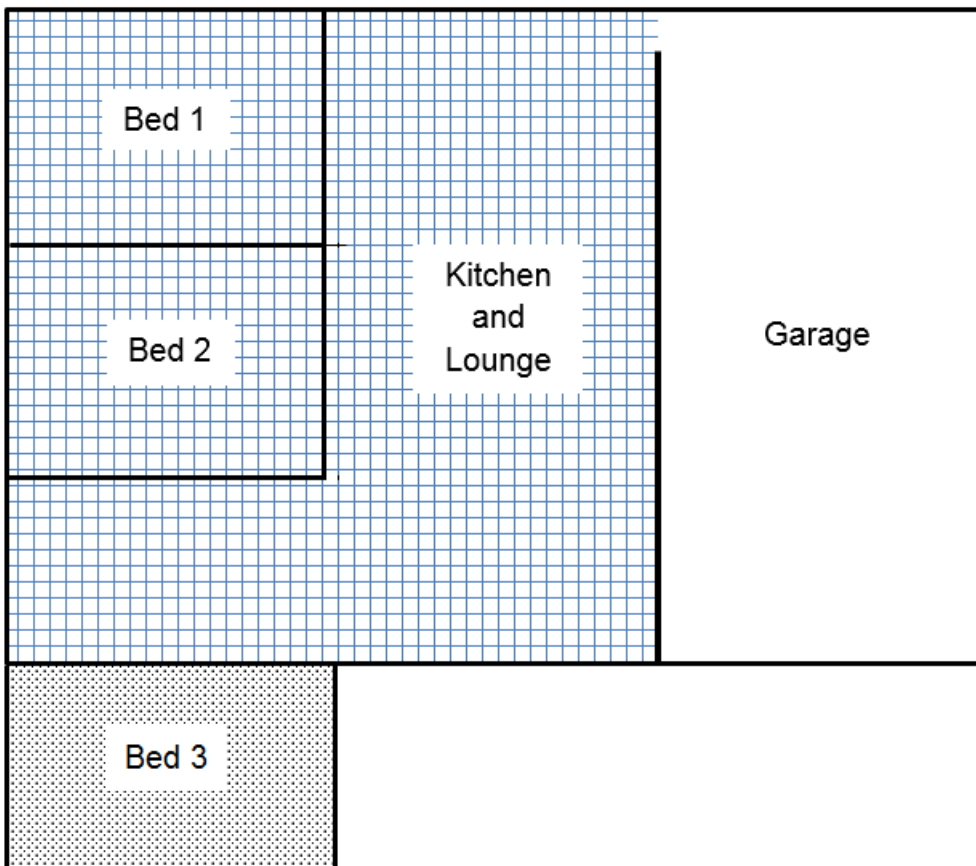
Example 1 - Proposed addition to existing building



Example 2 – Existing building (plan view)

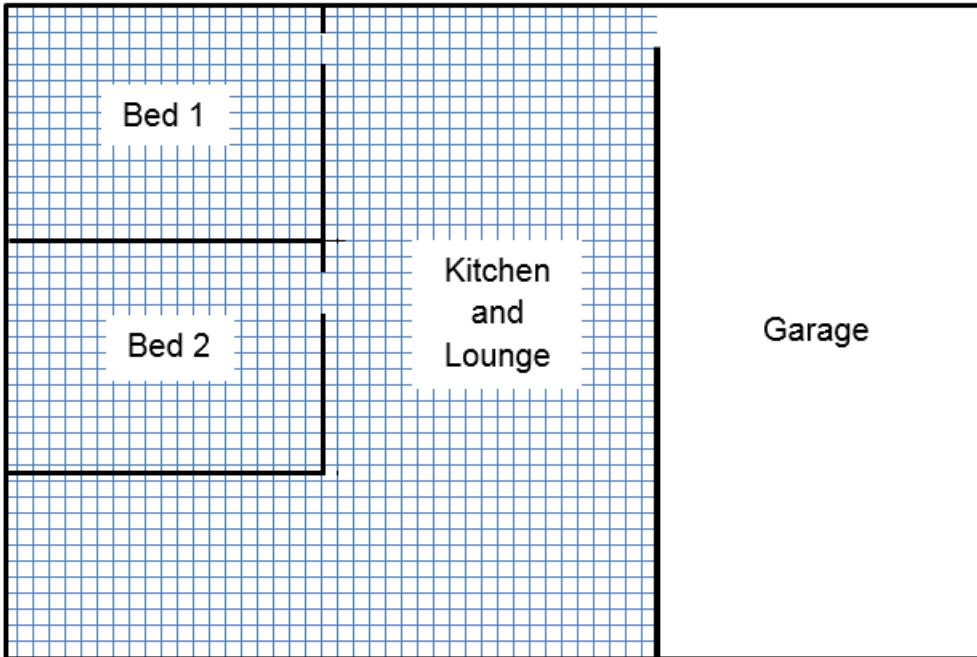


Example 2 - Proposed addition to existing building

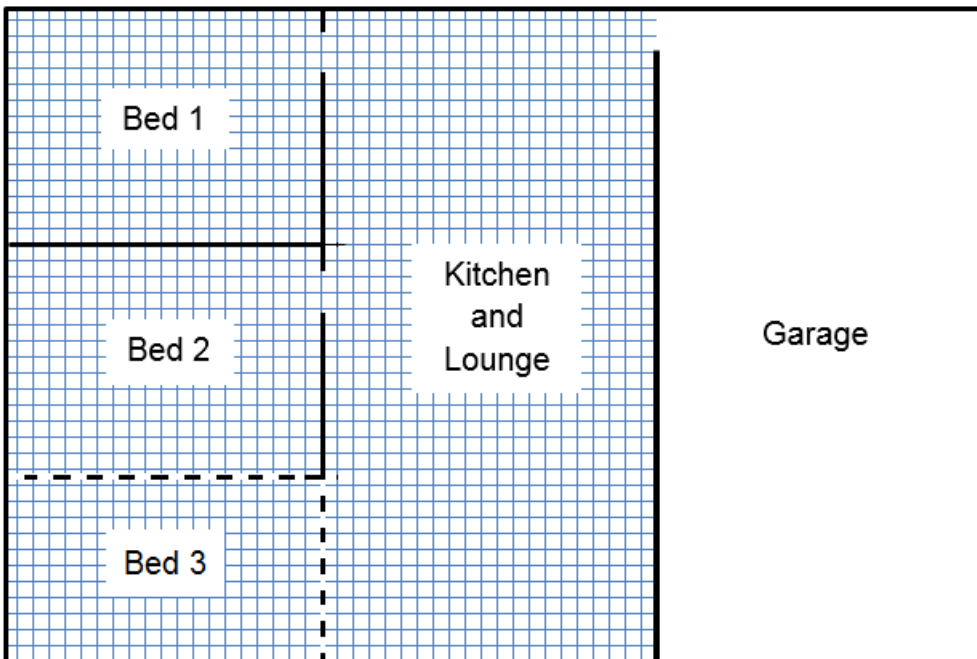


ALTERATIONS

Existing building (plan view)

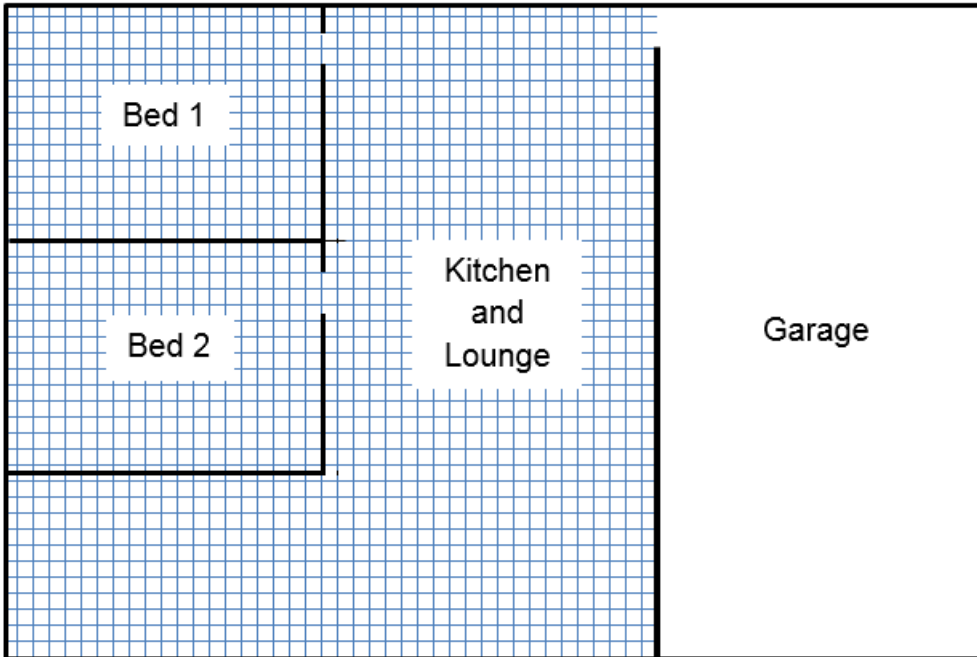


Proposed alterations to existing building

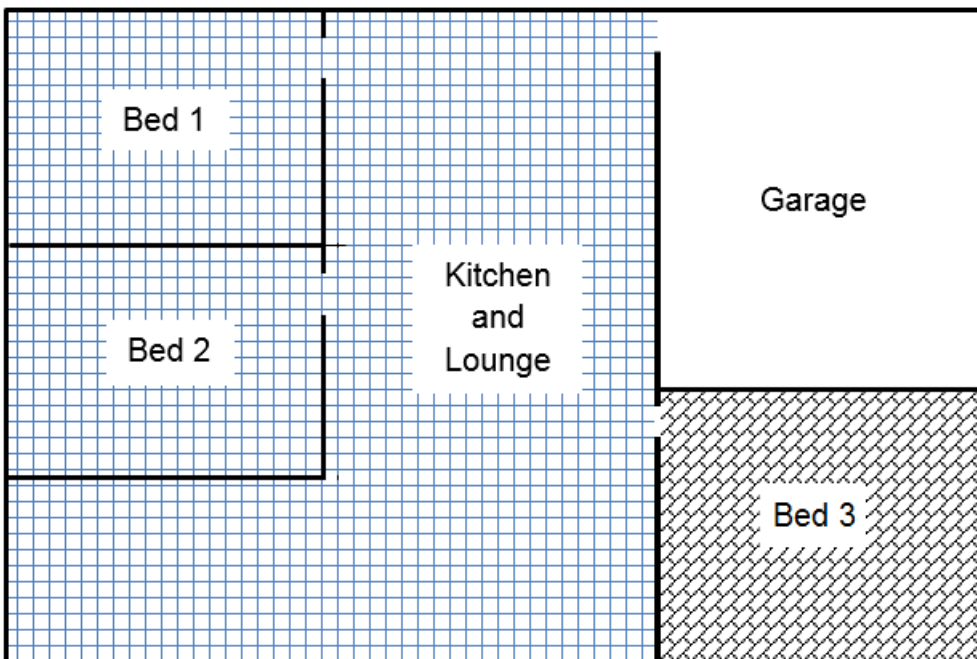


CHANGE OF USE

Existing building (plan view)



Proposed change of use to existing building



Schedule 2 – Flood Related Development Controls – Generic

Hazard/Hydraulic Category	High Hazard Floodway													
	Single Residential / Habitable Buildings	Single Residential / Habitable Buildings	Other Residential / Habitable	Carparks	Commercial / Industrial / Agricultural Buildings / Retail	Commercial / Industrial / Agricultural Buildings / Retail Existing Use Rights Only	Subdivision	Earthworks	Resources Management / Agriculture / Recreational Activities	Critical Infrastructure Assets / Potentially Polluting Activities	Buildings and activities requiring special evacuation consideration	Minor Development	Ancillary Structures	Events
Land Use Category (As per schedule 1)	A(I)	A(I)*	A(II)	B	C	C(I)*	D	E	F	G	H	I	J	K
FLOOR LEVEL*		1				1						1 or 4**		
BUILDING COMPONENTS		1, 2				1, 2			1, 2			1, 2	1, 2	
STRUCTURAL SOUNDNESS		2, 4				2, 4			3			2	3	
HYDRAULIC IMPACT		1				1			1, 2				1	
ACCESS		1, 2				1,2						3		
FLOOD EVACUATION PLAN		1				1						1		2
MANAGEMENT & DESIGN		1, 3				1, 2, 3			1, 2				1	

 Not suitable for development

 Not required

Note: For definitions of Land Use Categories refer to Schedule 1.

* This type of development is not suitable within the risk category - however, if existing use rights (as defined in the *Environmental Planning and Assessment Act 1979*) can be established and there is no other option, the conditions as per Schedule 2 will apply.

** Control no. 1 is desirable however if this cannot be achieved control no. 4 is acceptable.
Numbers in columns are described in the Development Controls Matrix Legend.

Hazard/Hydraulic Category	High Hazard Flood Storage or High Hazard Flood Fringe											
Land Use Category (As per schedule 1)	Single Residential / Habitable Buildings	Other Residential / Habitable Buildings	Carparks	Commercial / Industrial / Agricultural Buildings / Retail	Subdivision	Earthworks	Resources Management / Agriculture / Recreational Activities	Critical Infrastructure Assets / Potentially Polluting Activities	Buildings and activities requiring special evacuation consideration	Minor Development	Ancillary Structures	Events
	A(I)	A(II)	B	C	D	E	F	G	H	I	J	K
FLOOR LEVEL*	1	1	5	1				3		1 or 4**		
BUILDING COMPONENTS	1, 2	1, 2	1, 2	1, 2			1, 2	1, 2		1, 2	1, 2	
STRUCTURAL SOUNDNESS	2, 4	2, 4	2, 4	2, 4			3	2, 3, 4		2	3	
HYDRAULIC IMPACT	1	1	2	1		2	1, 2	1, 2			1	
ACCESS	1, 2	1, 2	1, 2	1, 2				1		3		
FLOOD EVACUATION PLAN	1	1	1	1						1		2
MANAGEMENT & DESIGN	1, 3	1, 3		1, 3			1, 2, 3	1, 2, 3			1	



Not suitable for development



Not required

**

Note: for definitions of Land Use Categories refer to Schedule 1 Control no. 1 is desirable however if this cannot be achieved control no. 4 is acceptable
Numbers in columns are described in the Development Controls Matrix Legend.

Chapter G9: Development on Flood Prone Land

Hazard/Hydraulic Category	Low Hazard Floodway, Low Hazard Flood Storage, Low Hazard Flood Fringe											
	Single Residential / Habitable Buildings	Other Residential / Habitable Buildings	Carparks	Commercial / Industrial / Agricultural Buildings / Retail	Subdivision	Earthworks	Resources Management / Agriculture / Recreational Activities	Critical Infrastructure Assets / Potentially Polluting Activities	Buildings and activities requiring special evacuation consideration	Minor Development	Ancillary Structures	Events
Land Use Category (As per schedule 1)	A(I)	A(II)	B	C	D	E	F	G	H	I	J	K
FLOOR LEVEL	1	1	5	1				3		4		
BUILDING COMPONENTS	1, 2	1, 2	1, 2	1, 2			1, 2	1, 2		1, 2		
STRUCTURAL SOUNDNESS	4	4	3	4				4				
HYDRAULIC IMPACT			2									
ACCESS	1, 2	1, 2	1, 2	1, 2	1, 2					3		
FLOOD EVACUATION PLAN			1									2
MANAGEMENT & DESIGN							1, 2, 3	1, 2, 3				



Not suitable for development



Not required

Note: for definitions of Land Use Categories refer to Schedule 1

Numbers in columns are described in the Development Controls Matrix Legend.

Chapter G9: Development on Flood Prone Land

Hazard/Hydraulic Category	Outside Flood Planning Area (Above the flood planning level but below the PMF)											
	Single Residential / Habitable Buildings	Other Residential / Habitable Buildings	Carparks	Commercial / Industrial / Agricultural Buildings / Retail	Subdivision	Earthworks	Resources Management / Agriculture / Recreational Activities	Critical Infrastructure Assets / Potentially Polluting Activities	Buildings and activities requiring special evacuation consideration	Minor Development	Ancillary Structures	Events
Land Use Category (As per schedule 1)	A(I)	A(II)	B	C	D	E	F	G	H	I	J	K
FLOOR LEVEL*									2			
BUILDING COMPONENTS									1			
STRUCTURAL SOUNDNESS									1			
HYDRAULIC IMPACT									1, 2			
ACCESS									1			
FLOOD EVACUATION PLAN									1			2
MANAGEMENT & DESIGN												



Not suitable for development



Not required

Note:

For definitions of Land Use Categories refer to Schedule 1

Numbers in columns are described in the Development Controls Matrix Legend.

Development Controls Matrix Legend

*Note: for new **building** applications **flood** levels for the year 2050 are to be used. For applications for subdivision or changes of land use **flood** levels for the year 2100 are to be used.

Floor Level:

1. 1% **AEP flood** level + 0.50M **freeboard**;
2. **Probable maximum flood** level;
3. 5% **AEP flood** level;
4. Existing **habitable floor level** or higher as practical; and
5. High enough to ensure a velocity - depth product of less than 0.3 m²/s for a 1% **AEP flood** event.

Building Components:

1. Any portion of the **building** or **structure** below the **FPL** to be built from **flood compatible materials** (being those materials used in **building** that are resistant to damage when inundated); and
2. All electrical installations to be above the **FPL**.

Structural Soundness:

1. Appropriate consulting engineer's report – the **building** can withstand forces of floodwaters including debris and buoyancy forces up to the **PMF** scenario;
2. Appropriate consulting engineer's report – the **building** can withstand forces of floodwaters including debris and buoyancy forces up to the 0.2% **AEP flooding** scenario;
3. Appropriate consulting engineer's report – the **building** can withstand forces of floodwaters including debris and buoyancy forces up to a 1% **AEP flooding** scenario;
4. Appropriate consulting engineer's report – the **structure** will not become floating debris during a 1% **AEP flooding** scenario; and
5. Certification of **building** foundations by a chartered geotechnical practitioner.

Hydraulic Impact:

1. Appropriate consulting engineer's report for **building** footprint areas over 250 square metres, a footprint length of more than 20 metres or any **development** that in the view of **Council** has the potential to significantly impact on others. The report is to prove that the **development** will not increase **flood hazard** or **flood** damage to other properties or adversely affect **flood** behaviour for a 5% **AEP** up to the **PMF** scenario.
No **hydraulic impact report** is required if the proposed **building** is raised on piers allowing free **flood** flow for a 1% **AEP flood** event.
2. Appropriate consulting engineers report for **earthworks** of volumes exceeding 250 cubic metres or with a length of more than 20 metres. The report is to prove that the **earthworks** will not increase **flood hazard**, **flood** damage or adversely affect other properties for a 5% **AEP** up to the **PMF** scenario.

Access:

1. Reliable emergency vehicle access is required for ambulance, SES, fire brigade, police and other **emergency services** during a 1% **AEP** flood event;
2. **Reliable access** for pedestrians is required during a 1% **AEP flood** event; and
3. **Reliable access** for pedestrians is desirable during a 1% **AEP flood** event.

Flood evacuation plan:

1. **Appropriate engineers** report demonstrating that permanent, fail-safe, maintenance-free measures are incorporated in the **development** to ensure that the timely, orderly and safe evacuation of people is possible from the area and that it will not add significant cost and disruption to the **community** or the SES.

Chapter G9: Development on Flood Prone Land

Management and design:

1. Applicant to demonstrate that there is an area where hazardous and valuable goods can be stored above the 1% **AEP Flood** Level;
2. Bunding to the **FPL** to be installed around hazardous chemical storage areas or the like; and
3. Applicant to demonstrate that there is an area where animals can find refuge above the 1% **AEP Flood** Level