

APPENDIX D

SUGGESTED WORDING FOR INCLUSION IN LITHGOW DEVELOPMENT CONTROL PLAN

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D1.1 Introduction

This section of the Plan sets out specific controls to guide development of flood liable land in the Lithgow City LGA. The approach to managing future development that is subject to flooding supports the findings of a series of location specific floodplain risk management studies and plans that have been prepared as part of the NSW Government's program to mitigate the impact of major floods and reduce the associated hazards in the floodplain.

D1.2 Objectives in Relation to Flood Risk Management

- a) To minimise the potential impact of development and other activity upon the aesthetic, recreational and ecological value of the waterway corridors.
- b) Increase public awareness of the hazard and extent of land affected by all potential floods, including floods greater than the 1% Annual Exceedance Probability (AEP) flood and to ensure essential services and land uses are planned in recognition of all potential floods.
- c) Inform the community of Council's controls and policy for the use and development of flood prone land.
- d) Reduce the risk to human life and damage to property caused by flooding through controlling development on land affected by potential floods.
- e) Provide detailed controls for the assessment of applications lodged in accordance with the *Environmental Planning and Assessment Act 1979* on land affected by potential floods.
- f) Provide different guidelines, for the use and development of land subject to all potential floods in the floodplain, which reflect the probability of the flood occurring and the potential hazard within different areas.
- g) Apply a "merit-based approach" to all development decisions which takes account of social, economic and ecological considerations.
- h) To control development and other activity within each of the individual floodplains within the LGA having regard to the characteristics and level of information available for each of the floodplains, in particular the availability of floodplain risk management studies and plans prepared in accordance with the *Floodplain Development Manual*, issued by the NSW Government.
- i) Deal equitably and consistently with applications for development on land affected by potential floods, in accordance with the principles contained in the *Floodplain Development Manual*.

D1.3 Procedure for Determining What Controls Apply to Proposed Development

The procedure Council will apply for determining the specific controls applying to proposed development in flood liable areas is set out below. Upon enquiry by a prospective applicant, Council will make an initial assessment of the flood affectation and flood levels at the site using the following procedure:

- Assess whether the development is located on flood liable land from the **Flood Planning Map**.
- Determine which set of prescriptive flood related planning controls apply to the development from the **Flood Planning Map** (i.e. Main Stream Flooding or Major Overland Flow).

- Identify the category of the development from **Schedule 1: Land Use Categories**.
- Determine the appropriate flood level at the site from the results of the location specific flood or floodplain risk management study.
- Determine which part of the floodplain the development is located in from the **Flood Planning Constraint Category Map**.
- Confirm that the development conforms with the relevant performance criteria, as well as the prescriptive controls set out in either **Schedule 2A** for Main Stream Flooding affected areas and **Schedule 2B** for Major Overland Flow affected areas.

With the benefit of this initial information from Council, the applicant will:

- Prepare the documentation to support the Development Application according to the requirements of **Section D1.9**.

A survey plan showing natural surface levels over the site will be required as part of the Development Application documentation. Provision of this plan by the applicant at the initial enquiry stage will assist Council in providing flood related information.

D1.4 Land Use Categories

The policy recognises twelve different types of land use for which a graded set of flood related controls apply. They are included in **Schedule 1: Land Use Categories**.

D1.5 Flood Planning Constraint Categories

For those floodplains where Council has adopted a flood or floodplain risk management study, the identified flood liable land has been divided into the following four *Flood Planning Constraint Categories (FPCCs)*:

- **Flood Planning Constraint Category 1 (FPCC 1)**, which comprises areas where factors such as the depth and velocity of flow, time of rise, and evacuation problems mean that the land is unsuitable for most types of development. The majority of new development types are excluded from this zone due to its potential impact on flood behaviour and the hazardous nature of flooding.
- **Flood Planning Constraint Category 2 (FPCC 2)**, which comprises areas which lie within the extent of the *Flood Planning Area* where the existing flood risk warrants careful consideration and the application of significant flood related controls on future development.
- **Flood Planning Constraint Category 3 (FPCC 3)**, which comprises areas which lie within the extent of the *Flood Planning Area* but outside areas designated FPCC1 and FPCC2. Areas designated FPCC3 are more suitable for new development and expansion of existing development provided it is carried out in accordance with the controls set out in this document.
- **Flood Planning Constraint Category 4 (FPCC 4)**, which comprises the area which lies between the extent of the *Flood Planning Area* and the Probable Maximum Flood (**PMF**). Flood related controls in areas designated FPCC4 are typically limited to flood evacuation and emergency response, although additional controls apply to essential community facilities and utilities that are critical for response and recovery, as well as community hospitals, residential care facilities and group homes. This area is identical to the *Special Flood Considerations Zone* shown on the **Flood Planning Map**.

D1.6 Development Controls

The development controls have been graded relative to the severity and frequency of potential floods, having regard to the FPCCs determined by the relevant Floodplain Risk Management Study and Plan or, if no such study or plan exists, Council's interim considerations.

The objectives of the development controls are:

- a) To require developments with high sensitivity to flood risk to be designed so that they are subject to minimal risk.
- b) To allow development with a lower sensitivity to the flood hazard to be located within the floodplain, provided the risk of harm and damage to property is minimised.
- c) To minimise the intensification of the high flood risk areas, and if possible, allow for their conversion to natural waterway corridors.
- d) To ensure design and siting controls required to address the flood hazard do not result in unreasonable social, economic or environmental impacts.
- e) To minimise the risk to life by ensuring the provision of reliable access from areas affected by flooding.
- f) To minimise the damage to property arising from flooding.
- g) To ensure the proposed development does not expose existing development to increased risks associated with flooding.

The performance criteria which are to be applied when assessing a proposed development are:

- a) The proposed development should not result in any significant increase in risk to human life, or in a significant increase in economic or social costs as a result of flooding.
- b) The proposal should only be permitted where effective warning time and reliable access is available to an area free of risk from flooding, consistent with any relevant Flood Plan or flood evacuation strategy.
- c) Development should not significantly increase the potential for damage or risk other properties either individually or in combination with the cumulative impact of development that is likely to occur in the same floodplain.
- d) Procedures would be in place, if necessary, (such as warning systems, signage or evacuation drills) so that people are aware of the need to evacuate are capable of identifying the appropriate evacuation route.
- e) Development should not result in significant impacts upon the amenity of an area by way of unacceptable overshadowing of adjoining properties, privacy impacts (e.g. by unsympathetic house-raising) or by being incompatible with the streetscape or character of the locality.

The prescriptive controls which apply to development that is proposed on land affected by Main Stream Flooding and Major Overland Flow are set out in **Schedules 2A** and **2B**, respectively.

D1.7 Proposals to Modify Flood Planning Constraint Categories

In certain situations it may be feasible to modify existing flood behaviour through engineering works which in turn would enable the extent of the FPCCs to be modified at a particular location. Proposals to modify an FPCC at a particular location would need to be supported by a detailed flooding investigation, further details of which are set out in **Section D1.9** below. Proposals would also need to demonstrate consistency with the flood related objectives and performance

criteria of both the *Lithgow Local Environmental Plan* and the *Lithgow Development Control Plan 2021*.

D1.8 Special Requirements for Fencing

The objectives are:

- a) To ensure that fencing does not result in the undesirable obstruction of the free flow of floodwater.
- b) To ensure that fencing does not become unsafe during floods so as to threaten the integrity of structures or the safety of people.
- c) Fencing is to be constructed in a manner which does not significantly increase flood damage or risk on surrounding land.

The performance criterion which is to be applied when assessing proposed fencing are:

- a) Fencing is to be constructed in a manner that does not affect the flow of floodwater so as to detrimentally increase flood affection on surrounding land.
- b) Fencing shall be certified by an engineer specialising in hydraulic engineering, that the proposed fencing is adequately constructed so as to withstand the force of floodwater, or collapse in a controlled manner to prevent the undesirable impediment of floodwater.

The prescriptive controls which apply to any proposed fencing on land designated FPCC 1, FPCC 2 and FPCC 3 are:

- a) An applicant will need to demonstrate that the fence (new or replacement fence) would create no impediment to the flow of floodwater. Appropriate fences must satisfy the following:
 - an open collapsible hinged fence structure or pool type fence, or louvre fencing;
 - must not be constructed of non-permeable materials; or
 - must allow floodwaters to equalised on both sides and minimise entrapment of flood debris.

D1.9 Explanatory Notes on Lodging Applications

Follow these major steps to lodge the application:

- a) Check the proposal is permissible in the zoning of the land by reference to any applicable environmental planning instruments.
- b) Consider any other relevant planning controls of Council (e.g. controls in any other relevant part of the *Lithgow Development Control Plan 2021*).
- c) Check whether your property is located either partially or wholly within the Flood Planning Area or Outer Floodplain, as defined on the **Flood Planning Map**.
- d) Determine which set of prescriptive flood related planning controls apply to the development from the **Flood Planning Map**.
- e) Determine which FPCC applies to the developable portion of your property by reference to the **Flood Planning Constraint Category Map**. Enquire with Council regarding existing flood risk mapping or whether a site-specific assessment may be warranted. A property may be located in more than one FPCC and the assessment must consider the

controls that apply in each. The flow diagram below summarises this consideration process.

- f) Determine the land use category relevant to the development proposal, by firstly confirming how it is defined by the relevant environmental planning instrument and secondly by ascertaining the land use category from **Schedule 1: Land Use Categories**.
- g) Assess and document how the proposal will achieve the performance criteria for proposed development and associated fencing set out in **Sections D1.6** and **D1.8**.
- h) Check if the proposal will satisfy the prescriptive controls for different land use categories in different FPCCs, as specified in either **Schedule 2A** or **Schedule 2B**.
- i) If the proposal does not comply with the prescriptive controls, determine whether the performance criteria are nonetheless achieved.
- j) Illustrations provided in this plan to demonstrate the intent of development controls are diagrammatic only. Proposals must satisfy all relevant controls contained in this plan and associated legislation.
- k) The assistance of Council staff or an experienced engineer or planner may be required at various steps in the process to ensure that the flood risk management related requirements of this Plan are fully and satisfactorily addressed.

Note that compliance with all the requirements of this plan does not guarantee that an application will be approved.

Information required with an application to address this plan is as follows:

- a) Applications must include information which addresses all relevant controls listed above, and the following matters as applicable.
- b) Applications for alterations and additions (see either **Schedule 2A** or **Schedule 2B**) to an existing dwelling on flood liable land shall be accompanied by documentation from a registered surveyor confirming existing floor levels.
- c) Development applications affected by this plan shall be accompanied by a survey plan showing:
 - i. The position of the existing building/s or proposed building/s;
 - ii. The existing ground levels to Australian Height Datum around the perimeter of the building and contours of the site; and
 - iii. The existing or proposed floor levels to Australian Height Datum.
- d) Applications for earthworks, filling of land and subdivision shall be accompanied by a survey plan (with a contour interval of 0.25 m) showing relative levels to Australian Height Datum.
- e) For large scale developments, or developments where an existing catchment based flood study is not available, a flood study using a fully dynamic one or two dimensional computer model may be required. For smaller developments the existing flood study may be used if available and suitable (e.g. it contains sufficient local detail), or otherwise a flood study prepared in a manner consistent with the latest edition of *Australian Rainfall and Runoff* and the *Floodplain Development Manual*, will be required. From this study, the following information shall be submitted in plan form:
 - i. water surface contours;
 - ii. velocity vectors;

- iii. velocity and depth product contours;
- iv. delineation of flood risk precincts relevant to individual floodplains; and
- v. show both existing and proposed flood profiles for the full range of events for total development including all structures and works (such as revegetation/enhancements).

This information is required for the pre–developed and post–developed scenarios.

- f) Where the controls for a particular development proposal require an assessment of structural soundness during potential floods, the following impacts must be addressed:
- i. hydrostatic pressure;
 - ii. hydrodynamic pressure;
 - iii. impact of debris; and
 - iv. buoyancy forces.

Foundations need to be included in the structural analysis.

D1.10 Glossary of Terms

Note: For expanded list of definitions, refer to Glossary contained within the NSW Government Floodplain Development Manual, 2005.

TERM	DEFINITION
Annual Exceedance Probability (AEP)	The chance of a flood of a given or larger size occurring in any one year, usually expressed as a percentage. For example, for a flood magnitude having five per cent AEP, there is a five per cent probability that there would be floods of greater magnitude each year.
Australian Height Datum (AHD)	A common national surface level datum corresponding approximately to mean sea level.
Floodplain	Area of land which is subject to inundation by floods up to and including the Probable Maximum Flood (PMF) event, that is, flood prone land.
Flood Planning Area	The area of land that is shown to be in the Flood Planning Area on the <i>Flood Planning Map</i> .
Flood Planning Map	The <i>Flood Planning Map</i> shows the extent of land on which flood related development controls apply in a given area, noting that other areas may exist which are not mapped but where flood related development controls apply.
Flood Planning Constraint Category 1 (FPCC 1)	Comprises areas where factors such as the depth and velocity of flow, time of rise, and evacuation problems mean that the land is unsuitable for most types of development. The majority of new development types are excluded from this zone due to its potential impact on flood behaviour and the hazardous nature of flooding
Flood Planning Constraint Category 2 (FPCC 2)	Comprises areas which lie below the <i>Flood Planning Level</i> where the existing flood risk warrants careful consideration and the application of significant flood related controls on future development.
Flood Planning Constraint Category 3 (FPCC 3)	Comprises areas which lie below the <i>Flood Planning Level</i> but outside areas designated FPCC1 and FPCC2. Areas designated FPCC3 are more suitable for new development and expansion of existing development provided it is carried out in accordance with the controls set out in this document.
Flood Planning Constraint Category 4 (FPCC 4)	Comprises the area which lies above the <i>Flood Planning Level (FPL)</i> but within the extent of the PMF. Flood related controls in areas designated FPCC4 are typically limited to flood evacuation and emergency response, although additional controls apply to essential community facilities and utilities that are critical for response and recovery, as well as community hospitals, residential care facilities and group homes. This area is identical to the <i>Special Flood Considerations Zone</i> shown on the Flood Planning Map .
Flood Planning Level (FPL)	<p>Flood levels selected for planning purposes, as determined by the relevant adopted floodplain risk management study and plan, or as part of a site specific study</p> <p>In the absence of an adopted floodplain risk management study and plan for a particular location, the FPL is defined as the peak 1% AEP flood level plus the addition of a 0.5 m freeboard.</p>

TERM	DEFINITION
Flood Prone/Flood Liable Land	Land susceptible to flooding by the PMF. Flood Prone land is synonymous with Flood Liable land.
Floodway	Those areas of the floodplain where a significant discharge of water occurs during floods. They are often aligned with naturally defined channels. Floodways are areas that, even if only partially blocked, would cause a significant redistribution of flood flow, or a significant increase in flood levels.
Flood Storage Area	Those parts of the floodplain that may be important for the temporary storage of floodwaters during the passage of a flood. Loss of flood storage can increase the severity of flood impacts by reducing natural flood attenuation.
Freeboard	Provides reasonable certainty that the risk exposure selected in deciding a particular flood chosen as the basis for the <i>Flood Planning Level</i> is actually provided. It is a factor of safety typically used in relation to the setting of floor levels, levee crest levels, etc. Freeboard is included in the <i>Flood Planning Level</i> .
Habitable Room	In a residential situation: a living or working area, such as a lounge room, dining room, kitchen, bedroom or workroom. In an industrial or commercial situation: an area used for offices or to store valuable possessions susceptible to flood damage in the event of a flood.
Local Drainage	Land on an overland flow path where the depth of inundation during the 1% AEP storm event is less than 0.1 m.
Main Stream Flooding	Inundation of normally dry land occurring when water overflows the natural or artificial banks of a stream, river, estuary, lake or dam.
Major Overland Flow	Where the depth of overland flow during the 1% AEP storm event is greater than 0.1 m.
Probable Maximum Flood (PMF)	The largest flood that could conceivably occur at a particular location. Generally, it is not physically or economically possible to provide complete protection against this event. The PMF defines the extent of flood prone land, that is, the floodplain.
Special Flood Consideration Zone	Comprises the area where the flood risk is considered to be high enough to require additional controls to be applied to future development that is located on land which lies above the FPL. The additional controls in this area relate to the safe and timely evacuation of people who would be occupying the floodplain at the time of a flood event and only apply in areas categorised as FPCC4.

**SCHEDULE 1
LAND USE CATEGORIES**

Land Use Category	Subdivision	LEP Land Uses
Critical Uses and Facilities	<i>Community facilities which may provide an important contribution to the notification or evacuation of the community during flood events.</i>	Health services facility; Electricity generating works; Emergency services facility.
Sensitive Uses and Facilities	<i>Uses which involve vulnerable members of the community; Uses which may cause pollution of a watercourse or town water supply; Uses which if affected, would significantly affect the ability of community to return to normal after flood event;</i>	Bio-solids treatment facility; Cemeteries; Child care centre; Correctional centre; Heavy industrial storage establishment; Heavy industries; Highway service centre; Group home; Passenger transport facilities; Respite day care centre; Schools; Seniors housing; Service Stations; Sewage treatment plant; Veterinary hospital; Waste or resource management facility; Water treatment facility.
Subdivision	<i>Subdivision of land which involves the creation of new allotments, with potential for further development;</i>	Camping grounds; Caravan parks; Eco-tourist facilities; Home business/ child care/occupations; Residential accommodation (excluding Group Home and Seniors housing); Tourist and visitor accommodation.
Residential		
Commercial and Industrial		Amusement centre; Commercial premises (excluding Market); Crematorium; Depots; Entertainment facility; Freight transport facilities; Function centre; General industries; Industrial retail outlet; Industrial training facility; Light industries; Mortuaries; Place of public worship; Public administration building; Recreation facility (indoor & major); Registered club; Research station;

		<p>Restricted premises; Sex services premises; Storage premises; Transport depots; Truck depots; Warehouse or distribution centre; Wholesale suppliers; Vehicle body repair workshops; Vehicle repair stations;</p>
Recreation and Non-Urban		<p>Agriculture (excluding intensive livestock agriculture); Animal boarding and training establishment; Boat sheds; Charter & tourism boating facilities; Car park; Community facility; Extractive industry; Forestry; Jetties; Market; Open cut mining; Recreation area; Recreation facility (outdoor).</p>
Alterations and additions		<p>Residential development:</p> <ol style="list-style-type: none"> i. An addition or alteration to an existing dwelling of not more than 50m² to the habitable floor area which existed at the date of commencement of this Plan; ii. The construction of an outbuilding with a maximum floor area of 30m² or Rebuilt dwellings which substantially reduce flood risk having regard to property damage and personal safety; or iii. A change of use which does not increase flood risk having regard to property damage and personal safety. <p>Alterations and additions:</p> <ol style="list-style-type: none"> i. An addition to existing premises of not more than 10% of the floor area which existed at the date of commencement of this DCP; ii. Rebuilding of a development which substantially reduces the extent of flood effects to the existing development; iii. A change of use which does not increase flood risk having regard to property damage and personal safety; or iv. Subdivision which does not involve the creation of new allotments with potential for further development.

**SCHEDULE 2A
PRESCRIPTIVE FLOOD RELATED DEVELOPMENT CONTROLS – MAIN STREAM FLOODING**

Planning considerations	Flood Planning Constraint Category 1 (FPCC 1)							Flood Planning Constraint Category 2 (FPCC 2)						Flood Planning Constraint Category 3 (FPCC 3)						Flood Planning Constraint Category 4 (FPCC 4)									
	Critical Uses and Facilities	Sensitive Uses and Facilities	Subdivision	Residential	Commercial and Industrial	Recreational and Non-Urban	Alterations and Additions	Critical Uses and Facilities	Sensitive Uses and Facilities	Subdivision	Residential	Commercial and Industrial	Recreational and Non-Urban	Alterations and Additions	Critical Uses and Facilities	Sensitive Uses and Facilities	Subdivision	Residential	Commercial and Industrial	Recreational and Non-Urban	Alterations and Additions	Critical Uses and Facilities	Sensitive Uses and Facilities	Subdivision	Residential	Commercial and Industrial	Recreational and Non-Urban	Alterations and Additions	
Minimum Habitable Floor Level						A1	A2 A4				A2	A5	A1	A2 A4				A2	A5	A1	A2 A4	A3	A3						
Building Components						B2	B2				B2	B2	B2	B2				B2	B2	B2	B2	B3	B3						
Structural Soundness						C2	C2				C2	C2	C3	C2				C2	C2	C3	C2	C4	C4						
Flood Affection						D1	D1				D1	D1	D1	D2				D1	D1	D1	D1	D2							
Emergency Response						E4	E2 or E3				E4 E5	E3 E4	E3 E4	E4	E2 or E3				E4 E5	E2 E4	E2 E4	E4	E2 or E3	E2 E4	E4 E5	E2 E4	E2 E4		E2 E4
Management and Design						F2 F3	F2 F3				F1	F2	F2 F3 F4	F2 F3	F2 F3				F1	F2	F2 F3 F4	F2	F2 F3	F2 F3 F4	F1	F2	F2 F3 F4	F2	F2
Stormwater							G2				G1 G2	G1 G2		G2				G1 G2	G1 G2	G1 G2		G2	G1	G1					
Parking and Driveway Access						H2 H4 H6 H7	H6 H7 H8				H1 H3 H5 H6 H7	H1 H3 H5 H6 H7	H1 H3 H5 H6 H7	H2 H4 H6 H7	H6 H7 H8				H1 H3 H5 H6 H7	H1 H3 H5 H6 H7	H2 H4 H6 H7	H6 H7 H8	H3	H3					

	Not Relevant		Unsuitable Land Use
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**SCHEDULE 2B
PRESCRIPTIVE FLOOD RELATED DEVELOPMENT CONTROLS – MAJOR OVERLAND FLOW**

Planning considerations	Flood Planning Constraint Category 1 (FPCC 1)							Flood Planning Constraint Category 2 (FPCC 2)							Flood Planning Constraint Category 3 (FPCC 3)							Flood Planning Constraint Category 4 (FPCC 4)								
	Critical Uses and Facilities	Sensitive Uses and Facilities	Subdivision	Residential	Commercial and Industrial	Recreational and Non-Urban	Alterations and Additions	Critical Uses and Facilities	Sensitive Uses and Facilities	Subdivision	Residential	Commercial and Industrial	Recreational and Non-Urban	Alterations and Additions	Critical Uses and Facilities	Sensitive Uses and Facilities	Subdivision	Residential	Commercial and Industrial	Recreational and Non-Urban	Alterations and Additions	Critical Uses and Facilities	Sensitive Uses and Facilities	Subdivision	Residential	Commercial and Industrial	Recreational and Non-Urban	Alterations and Additions		
Minimum Habitable Floor Level						A1	A2 A4				A2	A5	A1	A2 A4	A3	A3		A2	A5	A1	A2 A4	A3	A3							
Building Components						B1	B1				B1	B1	B1	B1	B3	B3		B1	B1	B1	B1	B3	B3							
Structural Soundness						C1	C1				C1	C1	C1	C1	C4	C4		C1	C1	C1	C1	C4	C4							
Flood Affection						D1	D1				D1	D1	D1	D2																
Emergency Response						E1	E1				E5				E2 or E3	E2 E4	E5					E2 or E3	E2 E4							
Management and Design						F2	F2				F1 F3	F2	F2 F4	F2	F2	F2 F3	F2 F3 F4	F1 F3		F4			F2 F3	F2 F3 F4						
Stormwater											G1	G1	G1		G1	G1	G1	G1		G1			G1	G1						
Parking and Driveway Access						H2 H4 H6 H7	H6 H7 H8				H1 H3 H5 H6 H7	H1 H3 H5 H6 H7	H1 H3 H5 H6 H7	H2 H4 H6 H7	H6 H7 H8			H1 H3 H5 H6	H1 H3 H5 H6	H1 H3 H5 H6	H2 H4 H6	H6 H8	H3	H3						

	Not Relevant		Unsuitable Land Use
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Prescriptive controls for associated planning considerations under each FPCC		
<p>Minimum Habitable Floor Level</p> <p>A1 Habitable floor levels to be set no lower than the 5% AEP flood level plus freeboard⁽¹⁾ unless justified by site specific assessment.</p> <p>A2 Habitable floor levels to be set no lower than the 1% AEP flood level plus freeboard⁽¹⁾.</p> <p>A3 Habitable floor levels to be set no lower than the PMF flood level.</p> <p>A4 Habitable floor levels to be as close to the Minimum Habitable Floor Level as practical and no lower than the existing floor level when undertaking concessional development.</p> <p>A5 Habitable floor levels to be as close to the 1% AEP flood level plus freeboard⁽¹⁾ as practical, but no lower than the 5% AEP flood level plus freeboard⁽¹⁾. In situations where the habitable floor level is set below the 1% AEP flood level plus freeboard⁽¹⁾, a mezzanine area equal to 30% of the total habitable floor area is to be provided, the elevation of which is to be set no lower than the 1% AEP flood level plus freeboard⁽¹⁾.</p>	<p>Building Components & Method</p> <p>B1 All structures to have flood compatible building components below the 1% AEP flood level plus freeboard⁽¹⁾ (refer Schedules 3A and 3B).</p> <p>B2 All structures to have flood compatible building components below the 1% AEP flood level plus freeboard⁽¹⁾ or the 0.2% AEP flood level, whichever is the highest (refer Schedules 3A and 3B).</p> <p>B3 All structures to have flood compatible building components below the 1% AEP flood plus freeboard⁽¹⁾ or the PMF level, whichever is the highest (refer Schedules 3A and 3B).</p>	<p>Structural Soundness</p> <p>C1 Engineers report to certify that any structure can withstand the forces of floodwater, debris and buoyancy up to and including a 1% AEP flood plus freeboard⁽¹⁾.</p> <p>C2 Engineers report to certify that any structure can withstand the forces of floodwater, debris and buoyancy up to and including a 1% AEP flood plus freeboard⁽¹⁾ or a 0.2% AEP flood, whichever is the greatest.</p> <p>C3 Applicant to demonstrate that any structure can withstand the forces of floodwater, debris and buoyancy up to and including a 1% AEP flood plus freeboard⁽¹⁾ or a 0.2% AEP flood, whichever is the greatest, alternatively PMF if required to satisfy emergency response criteria (see below).</p> <p>C4 Applicant to demonstrate that any structure can withstand the forces of floodwater, debris and buoyancy up to and including a 1% AEP flood plus freeboard⁽¹⁾ or a PMF, whichever is the greatest.</p>
<p>Flood Affection</p> <p>D1 Engineers report required to certify that the development will not increase flood affection elsewhere.</p> <p>D2 The impact of the development on flooding elsewhere to be considered.</p> <p>Note: When assessing flood affection the following must be considered:</p> <ol style="list-style-type: none"> 1. Loss of storage in the floodplain (Only for development being assessed under Schedule 2A). 2. Changes in flood levels and flow velocities caused by alteration of conveyance of flood waters. 3. Impacts of urbanisation on peak flood flows and volumes. 	<p>Emergency Response</p> <p>E1 Reliable egress for pedestrians and vehicles required during a 1% AEP flood.</p> <p>E2 Reliable egress for pedestrians and vehicles required during a PMF.</p> <p>E3 Reliable egress for pedestrians or vehicles is required from the building, commencing at a minimum level equal to the lowest habitable floor level to an area of refuge above the PMF level, or a minimum of 20 m² of the dwelling to be above the PMF level.</p> <p>E4 The development is to be consistent with any relevant flood evacuation strategy or similar plan.</p> <p>E5 Applicant to demonstrate that there is rising road egress/access from all allotments internal to the subdivision to land which lies above the PMF.</p>	<p>Management and Design</p> <p>F1 Applicant to demonstrate that potential development as a consequence of a subdivision or development proposal can be undertaken in accord with this Plan.</p> <p>F2 Flood Safe Plan (home or business or farm houses) to address safety and property damage issues (including goods storage and stock management) considering the full range of flood risk.</p> <p>F3 Site Emergency Response Flood Plan required considering the full range of flood risk</p> <p>F4 No external storage of materials below the Minimum Habitable Floor Level which may cause pollution or be potentially hazardous during any flood.</p>
<p>Stormwater</p> <p>G1 Engineers report required to certify that the development will not affect stormwater drainage.</p> <p>G2 The impact of the development on local overland flooding to be considered.</p>	<p>Parking and Driveway Access</p> <p>H1 The minimum surface level of open car parking spaces or carports shall be as high as practical, but no lower than the 5% AEP flood or the level of the crest of the road at the location where the site has access. In the case of garages, minimum surface level shall be as high as practical but no lower than the 5% AEP flood.</p> <p>H2 The minimum surface level of open car parking spaces, carports or garages shall be as high as practical</p> <p>H3 Garages capable of accommodating more than three motor vehicles on land zoned for urban purposes, or enclosed car parking, must be protected from inundation by floods up to the 1% AEP flood plus freeboard⁽¹⁾.</p> <p>H4 The driveway providing access between the road and parking space shall be as high as practical and generally rising in the egress direction.</p> <p>H5 The level of the driveway providing access between the road and parking space shall be no lower than 0.3 m below the 1% AEP flood or such that the depth of inundation during a 1% AEP flood is not greater than either the depth at the road or the depth at the car parking space. A lesser standard may be accepted for single detached dwelling houses where it can be demonstrated that risk to human life would not be compromised.</p> <p>H6 Enclosed car parking and car parking areas accommodating more than three vehicles (other than on Rural zoned land), with a floor level below the 5% AEP flood or more than 0.8 m below the 1% AEP flood level, shall have adequate warning systems, signage and exits.</p> <p>H7 Restraints or vehicle barriers to be provided to prevent floating vehicles leaving the site during a 1% AEP flood.</p> <p>H8 Driveway and parking space levels to be no lower than the design ground/floor levels. Where this is not practical, a lower level may be considered. In these circumstances, the level is to be as high as practical, and, when undertaking concessional development, no lower than existing levels.</p> <p>H9 Flood related parking and access requirements to be advised by Council if necessary. Contact Council for advice as early as possible.</p>	

1. Unless stated otherwise in an adopted location specific Floodplain Risk Management Study and Plan, freeboard is equal to 0.5 m for development being assessed under Schedule 2A and 0.3 m for development being assessed under Schedule 2B.

**SCHEDULE 3A
GENERAL BUILDING MATTERS**

Electrical and Mechanical Equipment

For dwellings constructed on land to which this policy applies, the electrical and mechanical materials, equipment and installation should conform to the following requirements.

Main Power Supply

Subject to the approval of the relevant authority the incoming main commercial power service equipment, including all metering equipment, shall be located above the relevant elevation referred to in control B1 or B2 of **Schedules 2A** and **2B**. Means shall be available to easily isolate the dwelling from the main power supply.

Wiring

All wiring, power outlets, switches, etc, should be, to the maximum extent possible, located above the relevant elevation referred to in control B1 or B2 of **Schedules 2A** and **2B**. All electrical wiring installed below this level should be suitable for continuous underwater immersion and should contain no fibrous components. Earth leakage circuit breakers (core balance relays) must be installed. Only submersible type splices should be used below the relevant elevation referred to in control B1 or B2 of **Schedules 2A** and **2B**. All conduits located below the relevant designated flood level should be so installed that they will be self-draining if subjected to flooding.

Equipment

All equipment installed below or partially below the relevant elevation referred to in control B1 or B2 of **Schedules 2A** and **2B** should be capable of disconnection by a single plug and socket assembly.

Reconnection

Should any electrical device and/or part of the wiring be flooded it should be thoroughly cleaned or replaced and checked by an approved electrical contractor before reconnection.

Heating and Air Conditioning Systems

Where viable, heating and air conditioning systems should be installed in areas and spaces of the house above the relevant elevation referred to in control B1 or B2 of **Schedules 2A** and **2B**. When this is not feasible, every precaution should be taken to minimise the damage caused by submersion according to the following guidelines:

i) Fuel

Heating systems using gas or oil as a fuel should have a manually operated valve located in the fuel supply line to enable fuel cut-off.

ii) Installation

The heating equipment and fuel storage tanks should be mounted on and securely anchored to a foundation pad of sufficient mass to overcome buoyancy and prevent movement that could damage the fuel supply line. All storage tanks should be vented to the relevant elevation referred to in control B1 or B2 of **Schedules 2A** and **2B**.

iii) Ducting

All ductwork located below the relevant elevation referred to in control B1 or B2 of **Schedules 2A** and **2B** should be provided with openings for drainage and cleaning. Self-draining may be achieved by constructing the ductwork on a suitable grade. Where ductwork must pass through a watertight wall or floor below the relevant flood level, a closure assembly operated from above the relevant elevation set out under B1 or B2 of **Schedules 2A** and **2B** should protect the ductwork.

Sewer

All sewer connections to properties in flood prone areas are to be fitted with reflux valves.

**SCHEDULE 3B
FLOOD COMPATIBLE MATERIALS**

Building Component	Flood Compatible Material	Building Component	Flood Compatible Material
Flooring and Sub Floor Structure	<ul style="list-style-type: none"> • Concrete slab-on-ground monolith construction. Note: clay filling is not permitted beneath slab-on-ground construction which could be inundated. • Pier and beam construction or • Suspended reinforced concrete slab 	Doors	<ul style="list-style-type: none"> • Solid panel with waterproof adhesives • Flush door with marine ply filled with closed cell foam • Painted material construction • Aluminium or galvanised steel frame
Floor Covering	<ul style="list-style-type: none"> • Clay tiles • Concrete, precast or in situ • Concrete tiles • Epoxy formed-in-place • Mastic flooring, formed-in-place • Rubber sheets or tiles with chemical set adhesive • Silicone floors formed-in-place • Vinyl sheets or tiles with chemical-set adhesive • Ceramic tiles, fixed with mortar or chemical set adhesive • Asphalt tiles, fixed with water resistant adhesive • Removable rubber-backed carpet 	Wall and Ceiling Linings	<ul style="list-style-type: none"> • Brick, face or glazed • Clay tile glazed in waterproof mortar • Concrete • Concrete block • Steel with waterproof applications • Stone natural solid or veneer, waterproof grout • Glass blocks • Glass • Plastic sheeting or wall with waterproof adhesive
Wall Structure	Solid brickwork, blockwork, reinforced, concrete or mass concrete	Insulation	<ul style="list-style-type: none"> • Foam or closed cell types
Windows	Aluminium frame with stainless steel or brass rollers	Nails, Bolts, Hinges and Fittings	<ul style="list-style-type: none"> • Galvanised • Removable pin hinges