

Flood Prone Land (B3.11, E11, 5.4.3)

Applies to Land

Identified on the Flood Risk Precinct Maps as being affected by flooding

Objectives

- Protection of people.
- Protection of the natural environment.
- Protection of private and public infrastructure and assets.

Requirements

The purpose of this Part is to guide development in accordance with the objectives and processes set out in the NSW Government's Flood Prone Land Policy as outlined in the NSW Government, Floodplain Development Manual, 2005.

Development to which this Part applies must comply with the performance criteria set out in clause 1.1.

Form A and A1 (Attachment A of Northern Beaches Council's Guidelines for preparing a Flood Management Report) is to be completed and submitted to Council

Development that satisfies the prescriptive controls in clause 1.2 is deemed to have satisfied clause 1.1.

1.1 Performance Criteria

- SITE LAYOUT AND BUILT FORM:** The site layout and ultimate built form of the proposed development should be compatible with the flood risk. Site analysis and layout should incorporate flood risk as a critical element in site planning.
- PUBLIC INTEREST:** The proposed development should not result in increased risk—to human life or damage to property or infrastructure—beyond acceptable limits.
- PRIVATE AND PUBLIC COSTS:** The economic and social costs, which may arise from damage to property from flooding, should not be exacerbated by proposed development.
- FLOOD EFFECTS CAUSED BY DEVELOPMENT ACTIVITY:** Development should not detrimentally increase the potential flood effects on other development or properties either individually or in combination with the cumulative impact of development that is likely to occur in the same floodplain.
- DRAINAGE INFRASTRUCTURE AND CREEK WORKS:** Any proposed works on drainage infrastructure or natural creeks, whether or not carried out as flood modification measures, shall:
 - Not cause adverse flooding impacts;
 - Not result in a loss of flood storage;
 - Increase protection of existing and proposed development; and
 - Not have a detrimental impact on the environment.
- BUILDING COMPONENTS:** Building components and materials likely to be affected by flood waters should be designed, built and installed so as not to be damaged by those floodwaters.
- STRUCTURAL SOUNDNESS:** The proposed development shall be designed and constructed so that it remains structurally sound for its intended life taking into account all the likely flood events during that lifetime.
- STORAGE OF GOODS:** Goods that are likely to amplify the damages arising from flood events—including but not limited to pollutants and toxic chemicals—shall be stored so as not to find their way into floodwaters.
- FLOOD EMERGENCY RESPONSE:** Proposed developments should only be permitted where effective warning time and reliable access is available for evacuation from an area potentially affected by floods to an area free of risk from flooding. Such an area may be within the same building where a shelter-in-place option is appropriate and achievable. The emergency response should be consistent with the Flood Emergency Response Planning for Development in Pittwater

Policy where it applies to the land. The proposed development should have procedures in place (such as warning systems, signage or evacuation drills) so that people are aware of the need to evacuate and relocate goods and motor vehicles during a flood and are capable of identifying an appropriate evacuation route.

- (j) **FLOOR LEVELS:** All floor levels within a proposed development shall be set at the required prescriptive level with additional consideration for the following:
 - a. The passage of flood waters;
 - b. The purpose for which that floor area is to used;
 - c. The relationship with the surrounding roadways;
 - d. The relationship with the existing building if the proposal is an extension; and
 - e. Surrounding built form and streetscape.
- (k) **FENCING:** Fencing shall be designed and constructed so that it does not impede and/or direct the flow of floodwaters, add debris to floodwaters or increase flood affectation on surrounding land.

1.2 Prescriptive Controls

The prescriptive controls that may be applied to development on flood prone land are listed below. A matrix has been prepared showing which of the controls apply to the various development types and flood risk precincts.

Development Matrix

The following is a summary of the major steps to be followed in applying this part of the DCP:

- (a) Determine the Flood Risk Precinct i.e. High Flood Risk Precinct, Medium Flood Risk Precinct and Low Flood Risk Precinct within which the site is situated;
Note: Where a property is located in more than one Precinct, the assessment must consider the controls relevant to each Precinct.
- (b) The various land use or development types have been grouped into seven (7) Land Use Categories (refer table 1). Determine the Land Use Category relevant to the proposal.
- (c) Check if the proposal will satisfy the prescriptive controls for the relevant land use category in the applicable Flood Risk Precinct (FRP).
- (d) If the proposal does not satisfy any one of the applicable prescriptive controls, or where those controls require the preparation of a Flood Management Report, then such a report shall be prepared. The Flood Management Report shall be prepared by a suitably qualified professional and shall outline the identified flood risks relevant to the proposal, indicate the extent of compliance with prescriptive controls and provide a thorough assessment of the appropriateness of the development by reference to each of the performance criteria.

MATRIX 1: Flood Risk Precincts (FRP's)

		High Flood Risk						
		Critical Uses	Vulnerable Uses	Subdivision	Residential	Business & Industrial	Recreational & Environmental	Concessional
A	Flood effects caused by Development	A1 A3 A4	A1 A3 A4	A1 A3	A1 A3	A1 A3	A2 A3	A2 A3
B	Drainage Infrastructure & Creek Works	B1 B2	B1 B2	B1 B2	B1 B2	B1 B2	B1 B2	
C	Building Components & Structural	C1 C2 C3	C1 C2 C3		C1 C2 C3	C1 C2 C3	C1 C2 C3	C1 C2 C3

D	Storage of Goods	D1 D2	D1 D2		D1 D2	D1 D2	D1 D2	D1 D2
E	Flood Emergency Response	E1 E2 E3	E1 E2 E3	E1 E4	E1 E2	E1 E2 E3	E1	E1
F	Floor Levels	F2 F3 F7	F2 F3 F7	F5	F1 F2 F3 F6 F8	F2 F2 F3 F6 F8 F10	F2	F2 F3 F6
G	Car Parking	G1 G4 G6 G7 G9 G10	G1 G4 G6 G7 G9 G10	G1	G1 G2 G3 G4 G5 G6 G7	G1 G2 G3 G4 G5 G6 G7	G1 G2 G3 G4 G5 G6 G7	G1 G2 G3 G4 G5 G6 G7
H	Fencing	H1	H1	H1	H1	H1	H1	H1
I	Pools	I1	I1	I1	I1	I1	I1	I1

Medium Flood Risk								
		Critical Uses	Vulnerable Uses	Subdivisi on	Residential	Business & Industrial	Recreational & Environmental	Concessional
A	Flood effects caused by Development	A1 A3 A4	A1 A3 A4	A1 A3	A1 A3	A1 A3	A2 A3	A2 A3
B	Drainage Infrastructure & Creek Works	B1 B2	B1 B2	B1 B2	B1 B2	B1 B2	B1 B2	
C	Building Components & Structural	C1 C2 C3	C1 C2 C3		C1 C2 C3	C1 C2 C3	C1 C2 C3	C1 C2 C3
D	Storage of Goods	D1 D2	D1 D2		D1 D2	D1 D2	D1 D2	D1 D2
E	Flood Emergency Response	E1 E2 E3	E1 E2 E3	E1 E4	E1 E2	E1 E2 E3	E1	E1
F	Floor Levels	F2 F3 F7	F2 F3 F7	F5	F1 F2 F3 F4 F6 F8 F9	F1 F2 F3 F4 F6 F8 F9 F10 F11	F2	F1 F2 F3 F4 F6 F11
G	Car Parking	G1 G4 G6	G1 G4 G6	G1	G1 G2 G3	G1 G2 G3	G1 G2 G3	G1 G2 G3

		G7 G9 G10	G7 G9 G10		G5 G6 G7 G8	G4 G5 G6 G7	G4 G5 G6 G7	G4 G5 G6 G7
H	Fencing	H1	H1	H1	H1	H1	H1	H1
I	Pools	I1	I1	I1	I1	I1	I1	I1

Low Flood Risk								
		Critical Uses	Vulnerable Uses	Subdivi on	Residential	Business & Industrial	Recreational & Environment al	Concessional
A	Flood effects caused by Development	A2 A3 A4	A2 A3 A4	A2 A3				
B	Drainage Infrastructure & Creek Works	B1 B2	B1 B2	B1 B2				
C	Building Components & Structural	C1 C2 C3	C1 C2 C3					
D	Storage of Goods	D1 D2	D1 D2					
E	Flood Emergency Response	E1 E2 E3	E1 E2 E3	E4				
F	Floor Levels	F2 F3 F7	F2 F3 F7	F5		F1 F3 F8		
G	Car Parking	G2 G6 G7 G9 G10	G2 G6 G7 G9 G10					
H	Fencing	H1	H1					
I	Pools	I1	I1					

Table 1 Land Use Groups

Critical	Vulnerable Uses	Residential
Emergency services facility	Child care centre	Boarding house
Hospital	Educational establishment	Dual occupancy
Sewerage system	Home-based child care	Dwelling house

Critical	Vulnerable Uses	Residential
Telecommunications facility (SP2)	Community health service facility	Exhibition home
Public Utility Undertaking (SP2)	Information and education facility	Exhibition village
Electricity generating works	Respite day care centre	Hostel
	Seniors housing	Residential flat building
	Caravan park	Rural worker's dwelling
	Group home	Secondary dwelling
	Residential care facilities	Semi-detached dwelling
	Correctional centre	Multi dwelling housing
	Tourist and visitor accommodation	Shop top housing
		Attached dwelling

Business & industrial		
Animal boarding or training establishment	Boat building and repair facility	Business premises
Camping ground	Car park	Charter and tourism boating facility
Community facility	Crematorium	Depot
Eco-tourist facilities	Entertainment facility	Freight transport facility
Function centre	General industry	Health consulting rooms
Heavy industrial storage establishments	Highway service centre	Home business
Home occupation	Home occupation (sex services)	Industrial retail outlet
Industrial training facility	Industries	Management facility
Marina	Medical centre	Mortuary
Neighbourhood shop	Office premises	Patient transport facilities
Place of public worship	Port facility	Public administration building
Recreation facility (indoor)	Registered club	Research station
Restricted premises	Retail premises	Rural industry
Service station	Sex services premises	Storage premises
Transport depot	Truck depot	Turf farming
Vehicle body repair workshop	Vehicle repair station	Veterinary hospital
Warehouse or distribution centre	Waste disposal facility	Waste water disposal system

Business & industrial		
Water recreation structure	Water supply system	Wharf or boating facilities
Wholesale supplies		

Recreational and Environmental	Subdivision	Concessional
Aquaculture	Subdivision	Development ancillary to residential development
Boat launching ramp		Occupation/change of use of an existing premises
Boat shed		Demolition
Earthworks		Additions/alterations to residential dwelling
Environmental facility		Additions/alterations to business/industrial buildings
Environmental protection works		Advertising structure
Extensive agriculture		Signage
Extractive industry		
Farm building		
Flood mitigation works		
Forestry		
Horticulture		
Recreation area		
Recreation facility (major)		
Recreation facility (outdoor)		
Road		
Viticulture		

No controls		
Intensive livestock agriculture	Jetty	Tree and/or bushland removal
Intensive plant agriculture	Mooring	Development / subdivision of a sector, buffer area or development site in a release area
Open cut mining	Mooring pen	

A. FLOOD EFFECTS CAUSED BY DEVELOPMENT

A1	Jetty
Intensive plant agriculture	Development (including earthworks and subdivision) shall not be approved unless it can be demonstrated in a Flood Management Report that it complies with the Flood Prone Land Design Standard found on Council's webpage.
A2	Certification shall be provided in accordance with Northern Beaches Council's Standard Hydraulic Certification Form (Forms A and A1 of Northern Beaches Council's Guidelines for preparing a Flood Management Report) to the effect that the works have been designed and can be constructed to adequately address flood risk management issues.
A3	The applicant shall include in their submission, calculations to illustrate that any fill or other structures that reduce the total flood storage are replaced by Compensatory Works.
A4	<p>Development (including earthworks and subdivision) shall not be approved unless it can be demonstrated in a Flood Management Report that it been designed and can be constructed so that in a Probable Maximum Flood event:</p> <p>(a) There are no adverse impacts on flood levels and velocities caused by alterations to the flood conveyance;</p> <p>(b) There are no adverse impacts on surrounding properties; and (c) It is sited to minimise exposure to flood hazard.</p> <p>Where relevant certification shall also be provided in Northern Beaches Council's Standard Certification Form (Forms A and A1 of Northern Beaches</p>

B. DRAINAGE INFRASTRUCTURE AND CREEK WORKS

B1	Flood mitigation works or stormwater devices that modify a major drainage system, stormwater system, natural water course, floodway or flood behaviour within or outside the development site may be permitted subject to demonstration through a Flood Management Report that they comply with the Flood Prone Land Design Standard found on Council's webpage.
B2	A Section 88B notation under the Conveyancing Act 1919 may be required to be placed on the title describing the location and type of flood mitigation works with a requirement for their retention and maintenance.

C. BUILDING COMPONENTS AND STRUCTURAL SOUNDNESS

C1	All buildings shall be designed and constructed as flood compatible buildings in accordance with Reducing Vulnerability of Buildings to Flood Damage: Guidance on Building in Flood Prone Areas, Hawkesbury-Nepean Floodplain Management Steering Committee (2006).
C2	All structures must be designed and constructed to ensure structural integrity up to the Flood Planning Level, taking into account the forces of floodwater, wave action, flowing water with debris, buoyancy and immersion. Structural certification shall be provided confirming the above. Where shelter-in-place refuge is to be provided the structural integrity is to be to the Probable Maximum Flood level.
C3	All new electrical equipment, power points, wiring, fuel lines, sewerage systems or any other service pipes and connections must be waterproofed and/or located above the Flood Planning Level. All existing electrical equipment and power points located below the Flood Planning Level must have residual current devices installed that turn off all electricity supply to the property when flood waters are detected.

D. STORAGE OF GOODS

D1	Hazardous or potentially polluting materials shall not be stored below the Flood Planning Level unless adequately protected from floodwaters in accordance with industry standards.
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D2	Goods, materials or other products which may be highly susceptible to water damage are to be located/stored above the Flood Planning Level.
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E. FLOOD EMERGENCY RESPONSE

E1	Development shall comply with Council's Flood Emergency Response Planning for Development in Pittwater Policy and the outcomes of any Flood Risk Emergency Assessment Report where it applies to the land.
E2	New development must provide an appropriately sized area to safely shelter in place above the Probable Maximum Flood level and appropriate access to this area should be available from all areas within the development.
E3	Adequate Warning Systems, Signage and Exits shall be installed to allow safe and orderly evacuation without reliance upon the SES or other authorised emergency services personnel.
E4	The application shall demonstrate that evacuation/shelter in place in accordance with the requirements of this DCP will be available for any potential development arising from a torrens title subdivision.

F. FLOOR LEVELS

F1	New floor levels within the development shall be at or above, the Flood Planning Level. A reduced Flood Planning Level may be considered only where it is permitted in this Development Control Plan. The structure must be flood proofed (wet or dry) to the Flood Planning Level. This control cannot be applied to critical or vulnerable uses.
F2	All development structures must be designed and constructed so as not to impede the floodway or flood conveyance on the site, as well as ensuring no loss of flood storage in a 1% AEP Event. Where the dwelling is located over a flow path it must be elevated on suspended pier/pile footings such that the level of the underside of all floors including balconies and decks within the flood affected area are at or above, or raised to the Flood Planning Level to allow clear passage of the floodwaters under the building. The development must comply with the Flood Prone Land Design Standard.
F3	Where the lowest floor has been elevated to allow the passage of flood waters, a restriction shall be imposed on the title of the land, pursuant to S88B of the Conveyancing Act confirming that the undercroft area is not to be enclosed.
F4	A one- off addition or alteration below the Flood Planning Level of less than 30 square metres or an increase of less than 10% of the ground floor area (whichever is the lesser) for residential development may be considered only where: (a) it is an extension to an existing room (b) the Flood Planning Level is incompatible with the floor levels of the existing room This control will not be permitted if this provision has previously been utilised since the making of this Plan. The structure must be flood proofed to the Flood Planning Level.
F5	The applicant must demonstrate that future development following a subdivision proposal can be undertaken in accordance with this Control.
F6	Any existing floor level may be retained below the Flood Planning Level when undertaking a first floor addition provided that: (a) it is not located within a floodway; (b) there is no increase to the building footprint below the Flood Planning Level; (c) it is flood proofed to the Flood Planning Level;
F7	All floor levels within the development shall be at or above the Probable Maximum Flood level or Flood Planning Level whichever is higher.

F8	The minimum floor level of any first floor additions shall be at or above the Probable Maximum Flood Level.
F9	Foyers – consideration may be given to a minimum floor level of a foyer being set at the 5% AEP flood level, provided it can be demonstrated that it complies with the Flood Prone Land Design Standard.
F10	Consideration may be given to a minimum floor level for the first 5 metres from the street front of new development in business zonings below the Flood Planning Level provided it can be demonstrated that it complies with the Flood Prone Land Design Standard.
F11	A one-off addition or alteration below the Flood Planning Level of less than 100 square metres or an increase of less than 10% of the ground floor area (whichever is the lesser) for non-residential development may be considered only where the required floor level cannot be achieved for the following reason: (a) it would be incompatible with floor levels of the existing building This control will not be considered if the existing floor level of the additions/alterations are located within a high hydraulic hazard area. This control will not be permitted if this provision has previously been utilised since the making of this Plan. Any features of the additions or alterations on the floor level must be flood proofed to the Flood Planning Level

G. CAR PARKING

G1	Open carpark areas and carports shall not be located within a floodway.
G2	The lowest floor level of open carparks and carports (unroofed or with open sides) shall be constructed no lower than the natural ground levels.
G3	<p>All enclosed car parks must be protected from inundation up to the relevant flood planning level. For example, basement carparks must be provided with a crest at the entrance, the crest of which is at the relevant Flood Planning Level.</p> <p>All access, ventilation and any other potential water entry points to any enclosed car parking shall be above the relevant Flood Planning Level.</p> <p>Council will not accept any options that rely on electrical, mechanical or manual exclusion of the floodwaters from entering the enclosed carpark</p>
G4	<p>Vehicle barriers or restraints are to be provided to prevent floating vehicles leaving the site where there is more than 300mm depth of flooding in a 1% AEP flood event.</p> <p>The minimum height of the vehicle barriers or restraints must be at or above the Flood planning Level.</p> <p>Vehicle barriers or restraints must comply with the Flood Prone Land Design Standard.</p>
G5	Enclosed Garages must be located at or above the 1% AEP level
G6	Carports must comply with the Flood Prone Land Design Standard
G7	Where a driveway is required to be raised it must be demonstrated that there is no loss to flood stage in the 1% AEP flood event and no impact on flood conveyance through the site
G8	Multi Dwelling Housing and Shop Top Housing residential carparking – consideration may be given to a minimum floor level for open or covered carparking being set at the 5% AEP flood level, provided it can be demonstrated that it complies with the Flood Prone Land Design Standard.
G9	All enclosed car parks must be protected from inundation up to the Probable Maximum Flood level or Flood Planning Level whichever is higher. For example, basement carparks must be provided with a crest at the entrance, the crest of which is at the relevant Probable Maximum Flood level or Flood Planning Level whichever is higher. All access, ventilation and any other potential water entry points to any enclosed car parking shall be above the relevant Probable Maximum Flood level or Flood Planning Level whichever is higher.

G10	Enclosed Garages must be located at or above the Probable Maximum Flood Level or Flood Planning Level whichever is higher.
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H. FENCING

H1	Fencing, including pool fencing, shall be designed so as not to impede the flow of flood waters and not to increase flood affectation on surrounding land. Appropriate fencing must comply with the Flood Prone Land Design Standard in addition to other regulatory requirements of pool fencing.
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I. POOLS

I1	<p>Pools located within the 1% AEP flood extent are to be in-ground, with coping flush with natural ground level. Where it is not possible to have pool coping flush with natural ground level, it must be demonstrated that the development will result in no net loss of flood storage and no impact on flood conveyance on or from the site.</p> <p>All electrical equipment associated with the pool (including pool pumps) is to be waterproofed and/or located at or above the Flood Planning Level.</p> <p>All chemicals associated with the pool are to be stored at or above the flood planning level.</p>
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Note

Applications must demonstrate compliance with the following references:

- *Flood Prone Land Design Standard*
- *Flood Risk Management Policy*