

8.2.7 Flood and inundation hazards overlay code

8.2.7.1 Application

This code applies to assessing development within the Flood and inundation hazards overlay as shown on the Flood and inundation hazards overlay maps contained in Schedule 2 or development for:

- (a) Emergency services (if for a police station); or
- (b) Industry activities (if including components which store, treat or use hazardous materials); or
- (c) Substation; or
- (d) Utility installation; or
- (e) Emergency services; or
- (f) Hospital; or
- (g) Major electricity infrastructure; or
- (h) Special industry.

When using this code, reference should be made to Part 5.

Note – The Flood and Inundation hazards overlay maps contained in Schedule 2 identify areas (flood and inundation areas) where flood and storm tide inundation modelling has been undertaken by Council. Other areas not identified by the Flood and inundation hazards overlay maps contained in Schedule 2 may also be subject to a Flood or inundation event.

The mapping data source for the Floodplain assessment precinct is very broad and is a high level default mapping product required by State policy to be reflected in areas where the inundation level of the defined hazard event has not been determined through appropriate flood studies. The map is provided to ensure that the risk of inundation is assessed and mitigated when development is proposed in these areas.

8.2.7.2 Purpose

- (1) The purpose of the Flood and inundation hazards overlay code is to ensure that development:
 - (a) protects the safety of people and minimises damage to property and the environment;
 - (b) does not adversely interfere with the function of drainage catchments and coastal processes or require complex engineering solutions to do so;
 - (c) minimises impacts from flood hazards and storm tide inundation hazards on the community in relation to infrastructure function, environmental values and economic productivity, and improves the resilience of the community to the impacts of climate change.
- (2) The purpose of the code will be achieved through the following overall outcomes:
 - (a) development maintains the safety of people and property from flood and storm tide inundation hazards;
 - (b) development minimises the exposure of people and property to unacceptable risk from flood and storm tide inundation hazards;
 - (c) development is designed, located and operated to minimise damage to property, disruption to building function and the re-establishment time after a flood or storm tide event;
 - (d) development ensures evacuation routes and emergency services are not impeded;
 - (e) development does not directly or cumulatively cause or increase adverse impacts of flood or storm tide inundation on other properties or require complex engineering solutions to mitigate adverse impacts;
 - (f) hazardous materials are not handled or stored in bulk where it would adversely impact on public safety and the environment as a result of the impacts of flood or storm tide inundation hazard events;
 - (g) development involving essential community infrastructure ensures it remains functional during and immediately after flood and storm tide inundation events;

- (h) development does not adversely impact on ecological functions of waterways, drainage paths and coastal processes.

Precinct 1 – Barron River Delta

- (3) In addition to 8.2.7.2(2), the overall outcomes sought for the precinct are:
 - (a) maintain the characteristics of the floodplain, including its storage capacity, water flow paths and velocities, and environmental qualities;
 - (b) protect the scenic amenity of this major inter-urban break.

Precinct 2 – Mount Peter

- (4) In addition to 8.2.7.2(2), the overall outcomes sought for the precinct are:
 - (a) the extent of filling is limited to Sub-precinct 2a - Low-medium hazard areas only;
 - (b) an efficient drainage network is provided to mitigate loss of natural floodplain storage.

Precinct 3 – CBD and environs

- (5) In addition to 8.2.7.2(2), the overall outcomes sought for the precinct are:
 - (a) development in the precinct ensures development results in no loss of planned floodplain storage.

Precinct 4 – Floodplain assessment

- (6) In addition to 8.2.7.2(2), the overall outcomes sought for the precinct are:
 - (a) defines the flood event;
 - (b) ensures development is compatible with the impact of the flood event.

8.2.7.3 Criteria for assessment

Part A – Criteria for self-assessable and assessable development

Table 8.2.7.3.a – Flood and inundation hazards overlay code – self-assessable and assessable development

Performance outcomes	Acceptable outcomes
For self-assessable and assessable development	
Safety of people and property	
<p>PO1 Development is located and designed to:</p> <ul style="list-style-type: none"> (a) ensure the safety of all persons; (b) minimise damages to the development and contents of buildings; (c) provide suitable amenity; (d) minimise disruption to residents, recovery time, and rebuilding or restoration costs after inundation events. 	<p>AO1.1 Development is sited on parts of the land that is not within the Defined inundation event area as shown on the Flood and inundation hazards overlay maps contained in Schedule 2;</p> <p>or</p> <p>AO1.2 Development is designed to provide immunity to the Defined Inundation Event as outlined within Table 8.2.7.3.b plus a freeboard of 300mm.</p>
Additional requirements for Precinct 2 – Mount Peter	
<p>PO2 The extent of future filling to support development is limited to areas of medium and low hazard as identified in Precinct 2 on the Flood and inundation hazards overlay maps contained in Schedule 2.</p>	<p>AO2.1 Filling of land to achieve immunity to the 1% AEP event occurs only in Sub-precinct 2a – Low-medium hazard area shown in Precinct 2 on the Flood and inundation hazards overlay maps contained in Schedule 2.</p> <p>AO2.2 Filling of land does not occur within Sub-precinct</p>

Performance outcomes	Acceptable outcomes
	2b – High-extreme hazard area shown in Precinct 2 on the Flood and inundation hazards overlay maps contained in Schedule 2.
Additional requirements for Precinct 3 – CBD and Environs	
<p>PO3 Development in Precinct 3 – CBD and environs ensures filling is not more than the planned loss of flood storage capacity.</p>	<p>AO3.1 Development involving filling of land within the zones shown in Precinct 3 on the Flood and inundation hazards overlay maps contained in Schedule 2 is not more than the following planned levels: (a) 100% of the flood storage capacity of the site in Sub-precinct Zone 1; (b) 60% of the flood storage capacity of the site in Sub-precinct Zone 2;</p> <p>AO3.2 Where development in Sub-precinct Zone 1 necessitates a finished floor level for ground level tenancies above the height of the existing footpath level any ramp, stairs or other features utilised to bridge the variation in floor level are contained wholly within the curtilage of the building.</p>
Hazardous materials and chemicals	
<p>PO4 Hazardous materials and chemicals are located and stored to ensure the public and environment are protected from adverse impacts of inundation waters being contaminated.</p>	<p>AO4.1 Hazardous materials and chemicals are stored above the defined inundation event.</p> <p>AO4.2 Structures used to store hazardous materials and chemicals are designed to prevent intrusion of flood and storm tide inundation.</p>
For assessable development	
Safety of people and property	
<p>PO5 Development minimises the exposure of people and property to unacceptable risk from flooding and storm tide inundation.</p> <p>Note – Planning Scheme Policy – Natural hazards provides guidance on preparing a Flood and inundation hazard assessment.</p>	<p>AO5.1 No acceptable outcomes are provided.</p>
<p>PO6 Development is designed, located and operated to minimise damage to property, disruption to building function and the re-establishment time after a flood or storm tide hazard event.</p>	<p>AO6.1 No acceptable outcomes are provided.</p>
Cumulative impacts of developments	
<p>PO7 Development does not directly or cumulatively cause or increase adverse impacts from flood or storm tide inundation on: (a) properties or land;</p>	<p>AO7.1 Development ensures there is no adverse change to the profile of flood or storm tide hazard events or its behaviour over land that is upstream, downstream or adjacent to the development site.</p>

Performance outcomes	Acceptable outcomes
<p>(b) ecological functions of waterways or other drainage paths, including water quality or their hydraulic capacity;</p> <p>(c) natural coastal processes.</p>	<p>AO7.2 Works do not involve any physical alteration (including vegetation clearing) to:</p> <ul style="list-style-type: none"> (a) a watercourse; (b) drainage path; (c) the coastline; (d) tidal waters and land; or (e) wetlands. <p>AO7.3 Development:</p> <ul style="list-style-type: none"> (a) avoid any reductions of on-site flood storage capacity and storm tide inundation, and contain within the subject site any changes to depth/duration/velocity of flood or storm tide hazards up to and including the 1% AEP Event; or (b) do not change the flood or storm tide characteristics at the Defined Inundation Event outside the site in ways that result in: <ul style="list-style-type: none"> (i) loss of flood storage capacity; (ii) loss of/changes to flow paths; (iii) acceleration or retardation of flows; (iv) any reduction in warning times elsewhere; <p>or</p> <p>AO7.4 The development is supported by a Inundation Hazard management plan that outlines the manner in which impacts of any changes to the flood or storm tide behaviour are mitigated to maintain the safety of people and property and the ecological function of the coast and tidal waters, flood plains, waterways and wetlands.</p>
<p>PO8 Development provides an efficient drainage network which:</p> <ul style="list-style-type: none"> (a) provides capacity for stormwater discharge; (b) minimises flooding from major rainfall events; (c) does not result in loss of floodplain storage; (d) does not result in adverse impacts upstream or downstream; (e) does not result in an unacceptable increase in peak flood levels and flows. 	<p>AO8.1 No acceptable outcomes are provided.</p>
Community infrastructure	
<p>PO9 Community infrastructure is designed to remain functional during and immediately after flood and storm tide hazard events.</p>	<p>AO9.1 Any components of the development that are likely to fail to function or may result in contamination when inundated (e.g. electrical switch gear and motors, water supply pipeline air valves) are:</p> <ul style="list-style-type: none"> (a) located above the Defined inundation event; or (b) designed and constructed to tolerate inundation. <p>AO9.2 Infrastructure is designed and constructed to</p>

Performance outcomes	Acceptable outcomes
	<p>withstand the impacts of flood and storm tide hazard events.</p> <p>AO9.3 Community infrastructure which is located below the Defined Inundation Event level:</p> <ul style="list-style-type: none"> (a) is designed to function effectively during and immediately after the flood or storm tide event; (b) has an emergency rescue area above the Defined Inundation Event level if it is for emergency services or hospitals.
Additional requirements for development within the Rural zone or Emerging community zone	
Evacuation routes and emergency services	
<p>PO10 Development ensures evacuation routes and emergency services are not impeded or otherwise plans for the prospect and impact of isolation or hindered evacuation during a flood or storm tide hazard event.</p>	<p>AO10.1 Development provides an effective evacuation route that remains passable, with sufficient flood or storm surge warning time, to enable people to progressively evacuate to areas above the Defined Inundation Event areas shown on the Flood and inundation hazards overlay maps contained in Schedule 2 in the lead up time to the event.</p>
Additional requirements for Precinct 1 – Barron River Delta	
<p>PO11 Development in Precinct 1 – Barron River Delta maintains the characteristics and values of the floodplain, including its storage capacity, water flow paths and velocities, and environmental qualities.</p> <p>Note – Planning Scheme Policy – Natural hazards provides guidance on preparing a Flood and inundation hazards assessment.</p>	<p>AO11.1 No acceptable outcomes are provided.</p>
<p>PO12 Development in Precinct 1 – Barron River Delta protects the scenic amenity of this major inter-urban break.</p>	<p>AO12.1 Development in the precinct does not result in an adverse impact on the amenity and landscape character of the area to achieve the required level of immunity.</p> <p>Note – The Landscape values overlay code provides further guidance on meeting the outcomes of this Acceptable outcome.</p>

Performance outcomes	Acceptable outcomes
Additional requirements for Precinct 4 – Floodplain assessment	
<p>PO13 Development in Precinct 4 – floodplain assessment ensures siting and layout responds to the flooding potential and maintains personal safety at all times.</p>	<p>AO13.1 Development on land partially affected by Precinct 4 - floodplain assessment is located outside the affected part of the site;</p> <p>or</p> <p>AO13.2 Development defines the flood event based on: (a) the highest known flood event and flood behaviours over land; or (b) the tolerable level of risk to people and property in the design, layout and mitigation measures; or (c) a Flood and inundation hazards assessment.</p> <p>Note – State Planning Policy – State interest guideline – Natural hazards, risk and resilience provides further guidance on Tolerable risk.</p> <p>AO13.3 Development that is for an urban purpose, reconfiguration of a lot (other than for a non-urban purpose), or Community infrastructure, is supported by a detailed Flood and inundation hazards assessment and all necessary measures are implemented to minimise the risk to people and property.</p> <p>Note – Planning Scheme Policy – Natural hazards provides guidance on preparing a Flood and inundation hazards assessment.</p>
<p>PO14 Development is compatible with the potential nature of the flood event defined for the site.</p>	<p>AO14.1 Development is located, designed, operated and managed to be compatible with the defined flood event.</p> <p>Note – The defined flood event in relation to this acceptable outcome is as identified in response to PO14. Where development is not supported by a flood hazard assessment, a risk assessment should provide an indication to the type of use and the level of immunity that would ordinarily be required and the consequence of the event occurring on that particular development.</p>

Table 8.2.7.3.b — Minimum immunity (floor levels) for development in the flood and inundation risk category

Minimum immunity to be achieved (floor levels)	Uses and elements of activities acceptable in the event
20% AEP level	<ul style="list-style-type: none"> • Parks and open space.
5% AEP level	<ul style="list-style-type: none"> • Car parking facilities (including car parking associated with use of land).
1% AEP level	<ul style="list-style-type: none"> • All development (where not otherwise requiring an alternate level of minimum immunity).
0.5% AEP level	<ul style="list-style-type: none"> • Emergency services (if for a police station); • Industry activities (if including components which store, treat or use hazardous materials); • Substation; • Utility installation.
0.2% AEP level	<ul style="list-style-type: none"> • Emergency services; • Hospital; • Major electricity infrastructure; • Special industry.