8.2.4 Flood hazard overlay code

8.2.4.1 Application

This code applies to assessing building work, material change of use, reconfiguring a lot or operational works development applications for development within the flood hazard area as shown on the **Flood hazard overlay maps (OM-004)** contained in Schedule 2 and identified as requiring assessment against the **Flood hazard overlay code** by the tables of assessment in Part 5.

When using this code, reference should be made to section 5.3.2 and, where applicable, section 5.3.3 located in Part 5.

8.2.4.2 Purpose

- (1) The purpose of the code will be achieved through the following overall outcomes:
 - (a) Development in the Extreme flood hazard area:
 - i. maintains and enhances the hydrological function of the land;
 - ii. does not involve filling (earthworks) or changes to existing landform or drainage lines that results in a loss of the flood conveyance and flood storage capacity of the land:
 - iii. is limited to:
 - A. flood proofed recreation activities;
 - B. rural activities where for animal husbandry, cropping, and permanent plantation;
 - C. flood proofed utility installations, substations, major electricity infrastructure;
 - D. conservation and natural area management; and
 - E. replacement of existing lawful development, including accommodation activities where habitable rooms are elevated above the defined flood level and include freeboard;
 - iv. Where there is no increase to the number of persons at risk of flood and where development reduces existing or potential risks to life and property.

(b) Development in the **High flood hazard area**:

- i. maintains the hydrological function of the land:
- ii. does not involve filling (earthworks) or changes to the existing landform or drainage lines that results in a loss of the flood conveyance and flood storage capacity of the land;
- iii. is limited to:
 - A. flood proofed recreation activities and club uses;
 - B. Hostel, Non-resident workforce accommodation, Relocatable home park, Resort complex, Short term accommodation and Tourist park uses where these uses comprise permanent on-site management and a flood evacuation management plan ensures the health and safety of persons during a flood event.
 - C. a *dwelling house* only where the lot existed or had a lawful reconfiguring a lot approval at the commencement of the planning scheme or where for minor intensification of existing *dwelling houses*;
 - D. rural activities where for animal husbandry, cropping, and permanent plantation:
 - E. *industrial activities* and *business activities* where it is accepted that flood damage is incurred as an operational cost and where flood sensitive elements of the development or use are elevated above the *defined flood level*, including *freeboard*:
 - F. flood proofed utility installations, substations, major electricity infrastructure;
 - G. conservation and natural area management; and
 - H. replacement of existing lawful development;
- iv. where there is no increase to the number of persons at risk of flood and where development reduces existing or potential risks to life and property;
- v. protects surrounding land and land uses from increased flood hazard impacts;
- vi. elevates *habitable rooms* for all *accommodation activities* (including where for *minor building work*) above the *defined flood level*, including *freeboard*.

(c) Development in the **Medium flood hazard area**:

- i. minimises risk to life and property from flood events;
- ii. involves changes to the existing landform and drainage lines in this area only where detrimental impacts to the flood hazard risk of surrounding areas is avoided;
- iii. is limited to:
 - A. recreation activities:
 - B. industrial activities and business activities where it is accepted that flood damage is incurred as an operational cost and where flood sensitive elements of the development or use are elevated above the defined flood level, including freeboard;
 - C. rural activities;
 - D. accommodation activities, excluding residential care facility and retirement facility;
 - E. flood proofed *community activities*, excluding *child care centre*, *hospital* and *community use* where a flood emergency evacuation plan ensures the safety of people during a flood event;
 - F. flood proofed utility installations, substations, major electricity infrastructure;
 - G. conservation and natural area management;
- iv. locates *habitable rooms* for all *accommodation activities* above the *defined flood level*, including *freeboard*; and
- v. locates the minimum floor level for all *buildings* other than *accommodation activities*, industrial activities and business activities above the defined flood level.

(d) Development in the **Low flood hazard area**:

- i. minimises risk to life and property from flood events;
- ii. locates habitable rooms for all accommodation activities above the defined flood level, including freeboard; and
- iii. locates the minimum floor level for all *buildings* other than *accommodation activities* above the *defined flood level*, including *freeboard*.

(e) Development in the **Potential flood hazard area**:

- i. maintains the safety of people on the development site from flood events and minimises the potential damage from flooding to property;
- ii. does not result in adverse impacts on people's safety, the environment or the capacity to use land within the floodplain;
- iii. locates habitable rooms for all accommodation activities above the defined flood level, including freeboard; and
- iv. locates the minimum floor level for all *building work* other than *accommodation activities* above the *defined flood level*, including *freeboard*.

8.2.4.3 Assessment benchmarks

Part A - Criteria for accepted and assessable development

Table 8.2.4.1 - Flood hazard overlay code

Performance outcomes	Acceptable outcomes	
For accepted, accepted subject to requirements and assessable development (code, code (fast tracked) and impact)		
All flood hazard areas		
PO1 Development prevents the carriage or dispersal of contaminants or pollutants into the receiving environment.	AO1 The processing or storage of dangerous goods or hazardous materials is: (a) not undertaken in a flood hazard area on Flood hazard overlay maps (OM-004); or (b) is located above the defined flood level plus 300mm freeboard.	

PO2 Community infrastructure is able to function effectively during and immediately after flood events. AC2 Design levels for buildings must comply with the flood immunity standards specified in Table 8.2.4.2 and Table 8.2.4.3 where within a flood hazard area identified on Flood hazard overlay maps (OM-004). Note- Refer to SC6.2 – Planning Scheme Policy 1 – Design and Construction Standards for definition of development type categories identified in Table 8.2.4.3.

Extreme flood hazard area

PO₃

Development within an Extreme flood hazard area on **Flood hazard overlay maps (OM-004)** is appropriate to the flood hazard risk having regard to the:

- (a) likelihood and frequency of flooding;
- (b) the flood risk acceptability of development:
- (c) the vulnerability of and safety risk to persons associated with the use; and
- (d) associated consequences of flooding in regard to impacts on proposed buildings, structures and supporting infrastructure.

Where for Material Change of Use AO3.1

Uses within the following *Activity groups* are not located within an Extreme flood hazard area identified on **Flood hazard overlay maps (OM-004)**:

- (a) Accommodation activities;
- (b) Business activities;
- (c) Centre activities, Community activities or Entertainment activities, except where for a Club with a maximum gross floor area of 100m²;
- (d) Industry activities;
- (e) Rural activities, except where for animal husbandry, cropping, and permanent plantation.

AO3.2

Recreation activities are not located within an Extreme flood hazard area identified on **Flood** hazard overlay maps (OM-004) except where for:

- (a) Environment facility;
- (b) Park; and
- (c) Outdoor Sport and Recreation (excluding the provision of ancillary facilities or amenities conducted within a building).

Performance outcomes

PO4

Development is located and designed to:

- (a) maintain and enhance the flood conveyance capacity of the premises;
- (b) not increase the number of people calculated to be at risk from flooding;
- (c) not increase the flood impact on adjoining premises;
- (d) ensure the safety of all persons by ensuring that development levels are set above the defined flood level:
- (e) reduce property damage; and
- (f) provide flood safe access to buildings.

Note- buildings may be constructed from flood resistant, waterproof materials below the defined flood level where certified by a qualified structural engineer to be flood proof (including the ability to withstand damage from floodwater and debris) and where a performance solution to PO3 is also demonstrated.

Note- in the event that a lawful *building* or *structure* is destroyed by flood or other event the building **may** be replaced where a building work approval is obtained and where not constituting a material change of use i.e. there is no increase in:

- i. gross floor area; or
- ii. the number of *dwellings* or bedrooms on the premises

Acceptable outcomes

Where for Material Change of Use or Building Work

AO4.1

Buildings, including extensions to existing buildings are:

- (a) not located within an Extreme flood hazard area on Flood hazard overlay maps (OM-004); or
- (b) elevated above the defined flood level; and
- (c) elevated above the *defined flood level* plus 300mm freeboard where for *habitable rooms* within a *dwelling*.

AO4.2

All *building work* must be high set (comprising pier and beam construction) and retains the flood storage and conveyance capacity of the premises.

Note- *Building work* must be certified by a qualified structural engineer to be flood proof including the ability to withstand damage from floodwater and debris.

Where for Material Change of Use

AO4.3

New *buildings* are provided with flood free pedestrian and vehicle evacuation access between the *building* and a flood safe accessible road.

Note- a flood safe accessible road includes a road where identified as no flood hazard, Low flood hazard, Potential flood hazard or Medium flood hazard on Flood hazard overlay maps (OM-004).

Where for Reconfiguring a Lot AO4.4

Development does not increase the number of lots in areas of Extreme flood hazard area as identified on **Flood hazard overlay maps (OM-004)** except where for the purposes of public open space.

PO5

Flood risk management minimises the impact on property and appropriately protects the health and safety of persons at risk of Extreme flood hazard, and:

- (a) indicates the position and path of all safe evacuation routes off the site; and
- (b) if the site contains or is within 100 metres of a flood hazard area, hazard warning signage and depth indicators are provided at key hazard points, such as at floodway crossings.

Note- A material change of use or reconfiguring a lot that involves new *gross floor area* or increases the number of persons living, working or residing in areas of Extreme flood hazard area as identified on **Flood hazard overlay maps (OM-004)** is supported by a Flood Emergency Evacuation Plan prepared by suitably qualified persons having regard to *Floodplain Management in Australia: Best Practice Principles*

Where for Material Change of Use or Reconfiguring a Lot that involves new *gross floor area* or increases the number of persons living, working or residing in areas of High flood hazard area other than a *Dwelling house* AO5

No acceptable outcome.

Performance outcomes Acceptable outcomes and Guidelines (2000), prepared by Standing Committee on Agriculture and Resource Management (SCARM), CSIRO. Where for Material Change of Use or Building Where for Material Change of Use or Building **Work or Operational Works Work or Operational Works AO6** Development involving earthworks in a flood Filling above *ground level* is not undertaken in areas of Extreme flood hazard area as identified hazard area below the defined flood level must on Flood hazard overlay maps (OM-004). protect life and property on premises and off premises through maintaining: (a) flood storage capacity of land; (b) flood conveyance function of land; (c) flood and drainage channels;

High flood hazard area

(d) overland flow paths; and (e) flood warning times.

PO7

Development within a High flood hazard area on Flood hazard overlay maps (OM-004) is appropriate to the flood hazard risk having regard to the:

- (a) likelihood and frequency of flooding:
- (b) the flood risk acceptability of development:
- (c) the vulnerability of and safety risk to persons associated with the use; and
- (d) associated consequences of flooding in regard to impacts on proposed buildings, structures and supporting infrastructure.

Where for Material Change of Use A07.1

Uses within the following *Activity groups* are not located within a High flood hazard area identified on Flood hazard overlay maps (OM-004):

- (a) Accommodation activities, except where for dwelling house and only where the lot existed or had a lawful reconfiguring a lot approval at the commencement of the planning scheme;
- (b) Centre activities, except where for business activities:
- (c) Community activities or Entertainment activities, except where for a Club with a maximum gross floor area of 100m²;
- (d) Rural activities, except where for animal husbandry, cropping, and permanent plantation.

A07.2

Recreation activities are not located within a High flood hazard area identified on Flood hazard overlay maps (OM-004) except where for:

- (a) Environment facility;
- (b) Park: and
- (c) Outdoor Sport and Recreation (excluding the provision of ancillary facilities or amenities conducted within a building).

PO8

Development is located and designed to:

- (a) maintain the flood conveyance capacity of the premises;
- (b) minimise the number of people calculated to be at risk from flooding;
- (c) minimise the flood impact on adjoining premises;
- (d) ensure the safety of all persons by ensuring that an appropriate proportion of *buildings* are set above the defined flood level;
- (e) reduce the carriage of debris in flood waters:
- reduce property damage; and
- (g) provide flood safe access.

Note- buildings may be constructed from flood resistant, waterproof materials below the defined flood

Where for Material Change of Use or Building Work

AO8.1

Buildings, including extensions to existing buildings are:

- (a) not located within a High flood hazard area on Flood hazard overlay maps (OM-004);
- (b) elevated above the defined flood level; and
- (c) elevated above the defined flood level plus 300mm freeboard where for *habitable rooms* within a dwelling.
- (d) comply with the Queensland Development Code MP 3.5 - Construction of buildings in flood hazard areas.

OR

Performance outcomes

level where certified by a qualified structural engineer to be flood proof (including the ability to withstand damage from floodwater and debris) and where a performance solution to PO8 is also demonstrated.

Note- in some circumstances a flood safe access may be provided in the form of an emergency evacuation route.

Acceptable outcomes

AO8.2

Where for business activities or industry activities buildings the minimum floor level supporting the following elements of the development must be located above the *defined flood level* plus 300mm freeboard:

- (a) administrative areas;
- (b) utilities, plant and equipment associated with the *building*.

Note- in complying with A08.2 the proponent accepts that the cost of flood impact is an operational cost of the business activity or industry activity.

AO8.3

All building work below the defined flood level must be high set (comprising pier and beam construction) and retains the flood storage and conveyance capacity of the premises.

Note- *Building work* must be certified by a qualified structural engineer to be flood proof including the ability to withstand damage from floodwater and debris.

AO8.4

New *temporary*, relocatable or impermanent *buildings* and *structures* are to be anchored with the ability to withstand transportation by floodwater.

Note- *Building work* must be certified by a qualified structural engineer.

Where for Material Change of Use AO8. 5

New *buildings* are provided with flood safe pedestrian and vehicle evacuation access between the *building* and a flood safe accessible road.

Note- a flood safe accessible road includes a road where identified as no flood hazard, Low flood hazard, Potential flood hazard or Medium flood hazard on Flood hazard overlay maps (OM-004).

Where for *Accommodation activities* AO8.6

Dwellings do not exceed four bedrooms.

Where for Reconfiguring a Lot AO8.7

Development does not increase the number of lots in areas of High flood hazard area as identified on **Flood hazard overlay maps (OM-004)** except where for the purposes of public open space.

Performance outcomes

PO9

Flood risk management minimises the impact on property and appropriately protects the health and safety of persons at risk of High flood hazard, and:

- (a) indicates the position and path of all safe evacuation routes off the site; and
- (b) if the site contains or is within 100 metres of a flood hazard area, hazard warning signage and depth indicators are provided at key hazard points, such as at floodway crossings.

Note- A material change of use or reconfiguring a lot that involves new *gross floor area* or increases the number of persons living, working or residing in areas of High flood hazard area as identified on **Flood hazard overlay maps (OM-004)** is supported by a Flood Emergency Evacuation Plan prepared by suitably qualified persons having regard to *Floodplain Management in Australia: Best Practice Principles and Guidelines* (2000), prepared by Standing Committee on Agriculture and Resource Management (SCARM), CSIRO.

Acceptable outcomes

Where for Material Change of Use or Reconfiguring a Lot that involves new *gross* floor area or increases the number of persons living, working or residing in areas of High flood hazard area other than a *Dwelling house* AO9

No acceptable outcome.

Where for Material Change of Use or Building Work or Operational Works PO10

Development involving earthworks in a flood hazard area below the *defined flood level* must protect life and property on premises and off premises through maintaining:

- (a) flood storage capacity of land;
- (b) flood conveyance function of land;
- (c) flood and drainage channels;
- (d) overland flow paths; and
- (e) flood warning times.

Where for Material Change of Use or Building Work or Operational Works AO10

Filling above *ground level* is not undertaken in areas of High flood hazard area as identified on **Flood hazard overlay maps (OM-004)**.

Medium flood hazard area

PO11

Development within a Medium flood hazard area on **Flood hazard overlay maps (OM-004)** is appropriate to the flood hazard risk having regard to the:

- (a) likelihood and frequency of flooding:
- (b) the flood risk acceptability of development;
- (c) the vulnerability of and safety risk to persons associated with the use; and
- (d) associated consequences of flooding in regard to impacts on proposed buildings, structures and supporting infrastructure.

Where for Material Change of Use AO11

The following uses are not located within a Medium flood hazard area identified on **Flood** hazard overlay maps (OM-004):

- (a) residential care facility:
- (b) retirement facility;
- (c) child care centre:
- (d) hospital; or
- (e) community use.

PO12

Flood risk management minimises the impact on property and appropriately protects the health and safety of persons at risk of Medium flood hazard, and:

- (a) indicates the position and path of all safe evacuation routes off the site; and
- (b) if the site contains or is within 100 metres of a flood hazard area, hazard warning signage and depth indicators are provided at key hazard points, such as at floodway crossings.

Where for Material Change of Use that involves three or more dwellings, or accommodation activities, business activities, centres activities, entertainment activities or community activities with a staff or resident or non-resident worker or guest occupancy of more than 10 persons on premises at any one time

AO12

No acceptable outcome.

Performance outcomes Note- A material change of us

Note- A material change of use that involves new gross floor area or increases the number of persons living, working or residing in areas of Extreme flood hazard area as identified on Flood hazard overlay maps (OM-004) is supported by a Flood Emergency Evacuation Plan prepared by suitably qualified persons having regard to Floodplain Management in Australia: Best Practice Principles and Guidelines (2000), prepared by Standing Committee on Agriculture and Resource Management (SCARM), CSIRO.

Acceptable outcomes

Medium flood hazard area, Low flood hazard area or Potential flood hazard area

PO13

Development is located and designed to:

- (a) maintain hydrological function of the premises:
- (b) not increase the number of people calculated to be at risk from flooding;
- (c) minimises the flood impact on adjoining premises;
- (d) ensure the safety of all persons by ensuring that a proportion of *buildings* are set above the *defined flood level*;
- (e) reduce the carriage of debris in flood waters:
- (f) reduce property damage; and
- (g) provide flood immune access to buildings.

Note- where the development is located in a Potential flood hazard area and there is no *defined flood level* as identified on **Flood hazard overlay maps (OM-004)** a hydraulic (flood hazard assessment) report prepared by a RPEQ is required in substantiation of a Performance Solution is required or the *defined flood level* from the adjacent representative hazard zone is used.

Where for Material Change of Use or Building Work

AO13.1

Buildings, including extensions to existing buildings are:

- (a) elevated above the defined flood level; and
- (b) and the defined flood event does not exceed a depth of 600mm; and
- (c) elevated above the *defined flood level* plus 300mm freeboard where for *habitable rooms* within a *dwelling*.
- (d) To comply with the Queensland Development Code MP 3.5 - Construction of buildings in flood hazard areas.

OR

AO13.2

Where for business activities or industry activities buildings the minimum floor level supporting the following elements of the development must be located above the *defined flood level* plus 300mm freeboard:

- (a) administrative areas;
- (b) utilities, plant and equipment associated with the *building*.

Note- in complying with A013.2 the proponent accepts that the cost of flood impact is an operational cost of the business activity or industry activity.

AO13.3

All building work below the defined flood level must be high set (comprising pier and beam construction) and retains the flood storage and conveyance capacity of the premises.

Note- *Building work* must be certified by a qualified structural engineer to be flood proof including the ability to withstand damage from floodwater and debris.

Where for Reconfiguring a Lot AO13.4

No acceptable outcome.

Where for Material Change of Use or Building Work or Operational Works PO14

Development involving earthworks in a flood hazard area below the *defined flood level* must protect life and property on premises and off premises through maintaining:

- (a) flood storage capacity of land;
- (b) flood conveyance function of land;

Where for Material Change of Use or Building Work or Operational Works AO14

Development does not involve in excess of 50m³ of fill above *ground level* per 1,000 metres squared of site area.

Performance outcomes	Acceptable outcomes
(c) flood and drainage channels;	
(d) overland flow paths; and	
(e) flood warning times.	

Table 8.2.4.2 Flood immunity levels

Development Type	Minimum design floor or pavement levels (mAHD)
Category A	100y ARI + 0.5 metres
Category B	100y ARI + 0.3 metres
Category C	100y ARI
Category D	100y ARI
Category E	50y ARI

Table 8.2.4.3 Community infrastructure immunity levels

Development Type	Minimum design floor or pavement levels (mAHD)
Emergency services, where for:	
Emergency Shelters	500y ARI
Police facilities	200y ARI
Other Emergency services	500y ARI + 0.5m
Hospital	500y ARI + 0.5m
Community use (where for the storage of valuable records or items of historic or cultural significance including libraries and museums)	200y ARI
Special industry (where for power station)	200y ARI
Substations	200y ARI
Utility installation (where for a sewage treatment plant)	200y ARI
Utility installation (where for a water treatment plant)	200y ARI
Utility installation (other)	200y ARI
Air services	200y ARI