

8.2.7 Flood hazard overlay code^{20 21}

8.2.7.1 Application

- (1) This code applies to accepted development and assessable development:-
 - (a) subject to the flood hazard overlay shown on the overlay maps contained within **Schedule 2 (Mapping)**; and
 - (b) identified as requiring assessment against the Flood hazard overlay code by the tables of assessment in **Part 5 (Tables of assessment)**.
- (2) The acceptable outcomes in **Table 8.2.7.3.1 (Requirements for accepted development)** are requirements for applicable accepted development.
- (3) The following provisions of the code are assessment benchmarks for applicable assessable development:-
 - (a) **section 8.2.7.2 (Purpose and overall outcomes)**; and
 - (b) **Table 8.2.7.3.2 (Performance outcomes and acceptable outcomes for assessable development)**.

8.2.7.2 Purpose and overall outcomes

- (1) The purpose of the Flood hazard overlay code is to ensure development protects people and avoids or mitigates the potential adverse impacts of flood and storm tide inundation on property, economic activity and the environment, taking into account the predicted effects of climate change.
- (2) The purpose of the Flood hazard overlay code will be achieved through the following overall outcomes:-
 - (a) development does not occur on land subject to flooding except in specified circumstances and only where the impacts of flooding can be effectively ameliorated such that there is no foreseeable risk to life or property;
 - (b) development protects *floodplains* and the flood conveyance capacity of *waterways*;
 - (c) development in areas at risk from flood and storm tide inundation is compatible with the nature of the defined flood or storm tide event;
 - (d) the safety of people is protected and the risk of harm to property and the natural environment from flood and storm tide inundation is minimised; and
 - (e) development does not result in a material increase in the extent or severity of flood or storm tide inundation.

8.2.7.3 Performance outcomes and acceptable outcomes

Table 8.2.7.3.1 Requirements for accepted development

Performance Outcomes		Acceptable Outcomes	
Dual Occupancy and Dwelling House			
PO1	A <i>dual occupancy</i> or <i>dwelling house</i> is sited and designed such that risk to people and property from flooding and storm tide inundation is avoided or minimised.	AO1	The finished floor level of all habitable rooms is at least 500mm above the <i>defined flood event (DFE)</i> and <i>defined storm tide event (DSTE)</i> .

²⁰ Editor's note—the Flood Hazard Overlay Maps in **Schedule 2 (Mapping)** identify areas (flood and inundation areas) where flood and storm tide modelling has been undertaken by the *Council*. Other areas not identified by the Flood Hazard Overlay Maps may also be subject to the *defined flood event* or *defined storm tide event*.

²¹ Editor's note—the **Planning scheme policy for the flood hazard overlay code** provides advice and guidance for achieving certain outcomes of this code, including guidance for the preparation of a flood hazard assessment report and management plan.

Performance Outcomes		Acceptable Outcomes	
			<p>OR</p> <p>Where the <i>DFE</i> and <i>DSTE</i> has not been modelled for the area, the finished floor level of all habitable rooms is at least 600mm above the highest recorded flood or storm tide inundation level.</p> <p>OR</p> <p>Where located on a <i>site</i> in a drainage deficient area, as identified on Figure 8.2.7 (Drainage deficient areas), the finished floor level of all habitable rooms is in accordance with the minimum floor level specified in a current drainage deficient area flood information certificate issued by the <i>Council</i> for the <i>site</i>.</p> <p>OR</p> <p>Where involving a minor extension to an existing <i>dwelling house</i> that is situated below the <i>DFE</i> or <i>DSTE</i> (or below the highest recorded flood or storm tide inundation level where the <i>DFE</i> and <i>DSTE</i> has not been modelled for the area):-</p> <ul style="list-style-type: none"> (a) the extension has a <i>gross floor area</i> not exceeding 20m²; and (b) the finished floor level of any new habitable room is not less than the floor level of existing habitable rooms.
PO2	A <i>dual occupancy</i> or <i>dwelling house</i> is sited and designed such that enclosed car parking and manoeuvring areas do not obstruct the drainage of flood waters or create a health hazard after flood and storm tide inundation events.	AO2	Enclosed car parking and manoeuvring areas situated below the <i>DFE</i> or <i>DSTE</i> (or below the highest recorded flood or storm tide inundation level where the <i>DFE</i> and <i>DSTE</i> has not been modelled for the area) are constructed at a level that permits the parking area to drain from the site by gravity means, without the need for mechanical pumping.
PO3	Essential network <i>infrastructure</i> (e.g. on-site electricity, water supply, sewerage and telecommunications) maintains effective functioning during and immediately after flood and storm tide inundation events.	AO3	Essential network <i>infrastructure</i> necessary to service the <i>dual occupancy</i> or <i>dwelling house</i> is:-
			<ul style="list-style-type: none"> (a) located above the <i>DFE</i> and <i>DSTE</i> (or where the <i>DFE</i> and <i>DSTE</i> has not been modelled for the area, above the highest recorded flood or storm tide inundation level for the area); or (b) designed and constructed to exclude floodwater or storm tide intrusion and resist hydrostatic and hydrodynamic forces as a result of inundation by the <i>DFE</i> or <i>DSTE</i>.
PO4	A <i>dual occupancy</i> or <i>dwelling house</i> does not directly, indirectly or cumulatively change flood characteristics which may cause adverse impacts external to the development <i>site</i> .	AO4.1	<p>Filling of areas outside of the plan area of all buildings and driveway areas does not exceed 50m³ and does not result in net filling on the <i>site</i>.</p> <p>OR</p> <p>Where located on a <i>site</i> in a drainage deficient area, as identified on Figure 8.2.7 (Drainage deficient areas), filling is undertaken in accordance with a current drainage deficient area flood information</p>

Performance Outcomes		Acceptable Outcomes	
		AO4.2	certificate issued by the <i>Council</i> for the <i>site</i> . Any building, structure or site <i>access</i> does not restrict overland flow.

Table 8.2.7.3.2 Performance outcomes and acceptable outcomes for assessable development

Performance Outcomes		Acceptable Outcomes	
<i>Floodplain Protection</i>			
PO1	Development is undertaken in a manner that ensures:- (a) natural hydrological systems are protected; (b) natural landforms and drainage lines are maintained to protect the hydraulic performance of <i>waterways</i> ; and (c) development integrates with the natural landform of the <i>floodplain</i> rather than modifying the landform to suit the development.	AO1	Not acceptable outcome provided.
PO2	In a flood and inundation area, as identified on a Flood Hazard Overlay Map, or in areas otherwise determined as being subject to the <i>defined flood event (DFE)</i> or <i>defined storm tide event (DSTE)</i> :- (a) any development involving physical alteration to land does not occur; or (b) urban and rural residential development, and other development involving the erection of a building or structure or significant earthworks satisfies at least one of the following criteria:- (i) the development is on land that is already committed to urban or rural residential development by an approval granted prior to the commencement of the planning scheme; (ii) the development is on land identified in a structure plan or a local plan as an area intended for urban development; (iii) the development is redevelopment or infill development within an existing developed area; (iv) an overriding community need in the public interest has been demonstrated that warrants approval of the development despite its occurrence within an area subject to flooding;	AO2	No acceptable outcome provided.

Performance Outcomes		Acceptable Outcomes	
	<p>or</p> <p>(v) the development is for the <i>infrastructure</i> identified on the planning scheme maps; and</p> <p>(c) achieving flood immunity for the development minimises physical alteration to the <i>floodplain</i>.</p>		
Flood and Storm Tide Inundation Immunity and Safety – Development Siting and Design			
PO3	<p>Development provides that for all flood and storm tide inundation events up to and including the <i>DFE</i> and <i>DSTE</i>:-</p> <p>(a) the safety of people on the <i>site</i> is protected; and</p> <p>(b) the risk of damage to property on the <i>site</i> is avoided or minimised as far as practicable.</p>	<p>AO3.1</p> <p>Finished surface and floor levels of urban lots, and buildings and <i>infrastructure</i> comply with the flood immunity requirements specified in Table 8.2.7.3.3 (Flood levels and flood immunity requirements for development and infrastructure).</p> <p>Note—the finished surface levels referred to in Table 8.2.7.3.3 relate to regional/riverine flooding and do not override the freeboard requirements for smaller catchments and local drainage specified in QUDM which continue to apply for local area flooding (overland flow paths and roads)/master drainage plans.</p> <p>AO3.2</p> <p>A lot in the Rural residential zone has a building envelope or <i>development footprint</i> at least 1,000m² in area that is generally rectangular in shape and has a finished surface level that complies with the criteria for residential development in Table 8.2.7.3.3.</p> <p>AO3.3</p> <p>A lot in the Rural zone has a building envelope or <i>development footprint</i> at least 3,000m² in area that is generally rectangular in shape and has a finished surface level that complies with the criteria for residential development in Table 8.2.7.3.3.</p>	
PO4	<p>Development does not compromise the safety of people resulting from the residual flood or storm tide inundation risk associated with events exceeding the <i>DFE</i> or <i>DSTE</i>, up to and including the <i>probable maximum flood (PMF)</i> or <i>probable maximum storm tide (PMST)</i>.</p>	<p>AO4</p> <p>Development provides an effective evacuation route that remains passable, with sufficient flood warning time, to enable people to progressively evacuate to areas above the <i>PMF</i> or <i>PMST</i> in the face of advancing flood or storm tide waters for events exceeding the <i>DFE</i> or <i>DSTE</i>.</p> <p>OR</p> <p>Development incorporates building floor levels or surface levels within each lot, as adequate <i>safe refuges</i>, that are above the <i>PMF</i> or <i>PMST</i>.</p>	
Building Design and Built Form			
PO5	<p>Development ensures that building design and built form:-</p> <p>(a) maintains a functional and attractive street front address appropriate to the intended use; and</p> <p>(b) ensures that building materials used have high water resistance and will improve the resilience of a building during and after a</p>	<p>AO5.1</p> <p>Buildings incorporate appropriate screening to ensure that any under-storey is not visible from the street, where such screening does not impede flood water flows.</p> <p>AO5.2</p> <p>Building materials and surface treatments used below the <i>DFE</i> or <i>DSTE</i> are resilient to water damage and do not include wall cavities that may be susceptible to the intrusion of water and sediment.</p>	

Performance Outcomes		Acceptable Outcomes	
			minimise movement in times of flood or inundation.
Flood Impacts			
PO9	Development does not directly, indirectly or cumulatively alter the flooding characteristics external to the development <i>site</i> for all flood events up to and including the <i>DFE</i> or <i>DSTE</i> , based on:- (a) current climate conditions; and (b) incorporating an appropriate allowance for the predicted impacts of climate change.	AO9	In a flood and inundation area, as identified on a Flood Hazard Overlay Map, or in areas otherwise determined as being subject to the <i>DFE</i> or <i>DSTE</i> :- (a) there is no loss of on-site flood storage capacity; (b) any changes to level, depth, duration and velocity of floodwaters are contained within the <i>site</i> for all flood events up to and including the <i>DFE</i> or <i>DSTE</i> based on:- (i) current climate conditions; and (ii) incorporating an allowance for the predicted impacts of climate change at the year 2100; (iii) catchment conditions relevant at the time of upstream or downstream development; (c) no earthworks (including filling of land or reduction of flood storage capacity) occurs, unless:- (i) such earthworks result in the rehabilitation and repair of the hydrological network and riparian ecology of a <i>waterway</i> ; and (ii) an assessment undertaken by a competent person demonstrates that reforming of the land does not negatively impact on the overall hydrology, hydraulics and flood capacity of the <i>waterway</i> and does not, in any way, result in the reduction of flood storage capacity on the <i>site</i> ; or (iii) such earthworks relate to improving drainage in a drainage deficient area, as identified on Figure 8.2.7 (Drainage deficient areas) , and are undertaken in accordance with a current drainage deficient area flood information certificate issued by the <i>Council</i> .
PO10	Development does not increase the severity of storm tide related impacts for off-site property for all storm tide events up to and including the <i>DFE</i> or <i>DSTE</i> , based on:- (a) current climate conditions; and (b) incorporating an appropriate allowance for the predicted impacts of climate change at the end of the design life of the development.	AO10	Development does not involve any physical alteration to the <i>storm tide inundation area</i> , including <i>vegetation clearing</i> . OR Development avoids or, where avoidance is not possible, minimises alterations to the <i>site</i> that would result in:- (a) acceleration or redirection of flows towards neighbouring <i>infrastructure</i> and development; (b) increased local water levels; or (c) increased breaking wave heights.

Table 8.2.7.3.3 Flood levels and flood immunity requirements for development and infrastructure

Column 1 Type of development	Column 2 Flood level (DFE/DSTE) ²²		Column 3 Minimum design level ^{23 24 25}	
	Column 2A Recurrence Interval	Column 2B Planning period for climate change	Column 3A Surface ²⁶	Column 3B Floor
<i>General</i>				
Business	1% AEP	2100	DFE/DSTE or Historical	DFE/DSTE + 0.5m or Historical + 0.6m
Industrial	1% AEP	2100	DFE/DSTE + 0.5m or Historical + 0.6m	DFE/DSTE + 0.5m or Historical + 0.6m
Residential	1% AEP	2100	DFE/DSTE + 0.5m or Historical + 0.6m	DFE/DSTE + 0.5m or Historical + 0.6m
Community (<i>Child care centre / Educational establishment</i>)	0.5% AEP	2100	DFE/DSTE or Historical	DFE/DSTE + 0.5m or Historical + 1m
Other than as specified above	1% AEP	2100	DFE/DSTE + 0.5m or Historical + 0.6m	DFE/DSTE + 0.5m or Historical + 0.6m
<i>Community activities that are essential community infrastructure (recommended flood level [RFL])</i>				
Emergency service facilities other than police facilities ²⁷	0.2% AEP	2100	DFE/DSTE or Historical	DFE/DSTE + 0.5m or Historical + 1m
Emergency shelter	0.2% AEP	2100	DFE/DSTE or Historical	DFE/DSTE + 0.5m or Historical + 1m
Hospitals and associated facilities	0.2% AEP	2100	DFE/DSTE or Historical	DFE/DSTE + 0.5m or Historical + 1m
Police facilities ²⁷	0.5% AEP	2100	DFE/DSTE or Historical	DFE/DSTE + 0.5m or Historical + 1m
Stores of valuable records or items of historic or cultural significance	0.5% AEP	2100	DFE/DSTE or Historical	DFE/DSTE + 0.5m or Historical + 1m
<i>Utilities that are essential community infrastructure (recommended flood level [RFL])</i>				
Major switch yards and substation	0.5% AEP	2100	DFE/DSTE or Historical	DFE/DSTE + 0.5m or Historical + 1m
Power station	0.2% AEP	2100	DFE/DSTE or Historical	DFE/DSTE + 0.5m or Historical + 1m
Sewage treatment plant ²⁸	0.01% AEP	2100	N/A	DFE/DSTE or Historical + 1m
Water treatment plant	0.5% AEP	2100	DFE/DSTE or Historical	DFE/DSTE + 0.5m or Historical + 1m
<i>Infrastructure²⁹</i>				
Access roads and car parking	10% AEP	2100	DFE/DSTE and maximum inundation depth of 250mm during 1% AEP event	N/A
Collector streets and above	1% AEP	2100	DFE/DSTE	N/A
Other than as specified above	1% AEP	2100	DFE/DSTE or Historical	DFE/DSTE or Historical
<i>Hazardous and other materials</i>				
Manufacture and storage of hazardous materials in bulk	1% AEP	2100	DFE/DSTE + 0.5m or Historical + 1m	DFE/DSTE + 0.5m or Historical + 1m

²² Note—the DFE/DSTE is the nominated recurrent event at the end of the nominated planning period.

²³ Note—the minimum design level is the DFE/DSTE, (including freeboard where nominated). Where the DFE/DSTE is unavailable the minimum design level is the historic level (including freeboard where nominated).

²⁴ Note—for development which is reconfiguring a lot for urban purposes, the minimum design level nominated applies to the entire lot and all associated infrastructure.

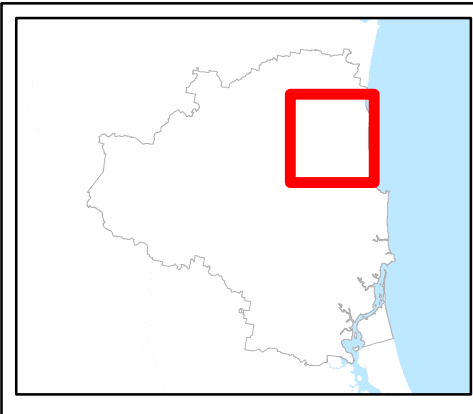
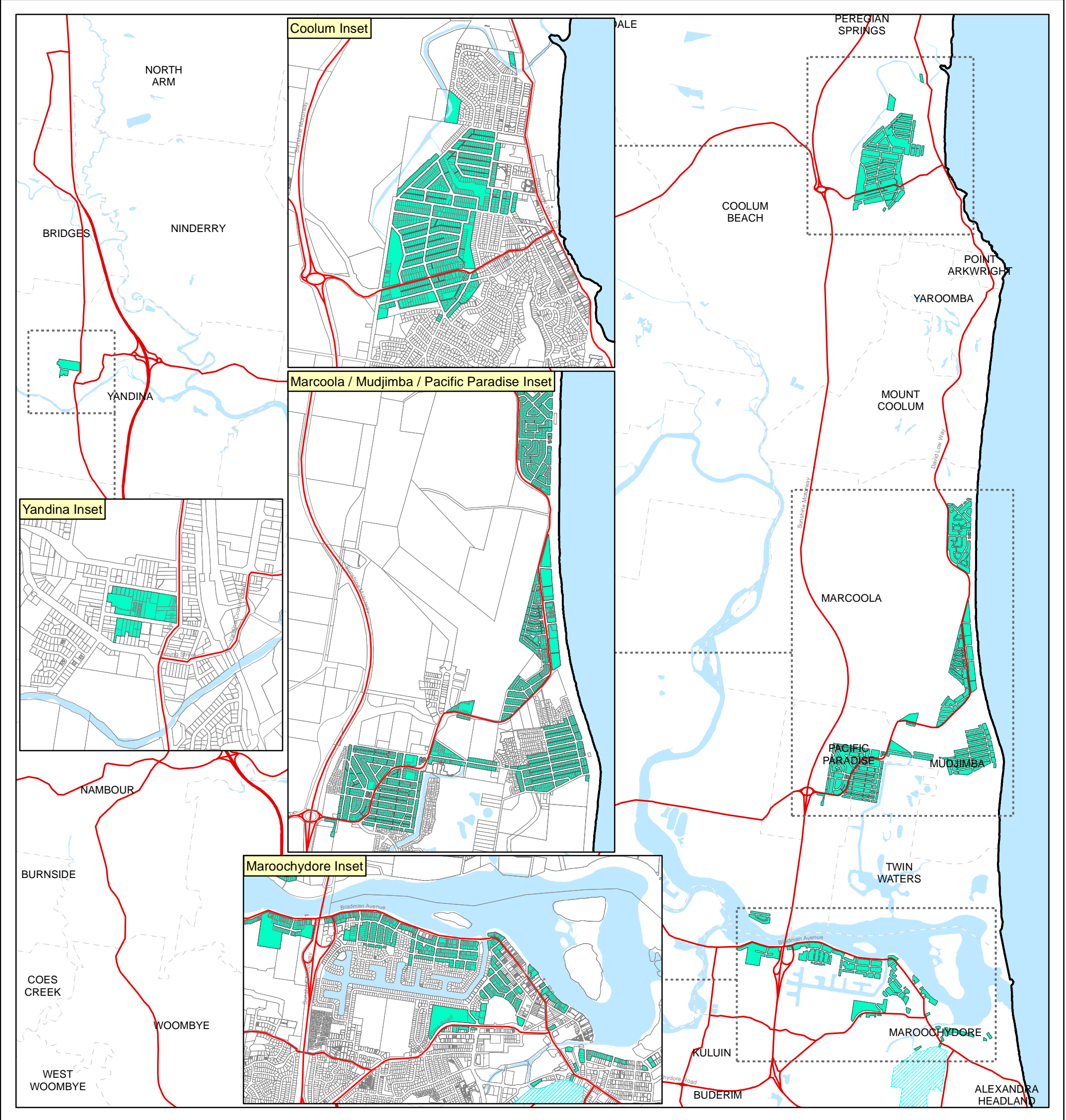
²⁵ Note—for development which is reconfiguring a lot for rural or rural residential purposes, the minimum design level nominated applies to the building envelope or development footprint area only, subject to access to the building envelope or development footprint area from the road network being trafficable during the 1% AEP event and flood-free during the 39% AEP event.

²⁶ Note—surface level requirements apply to development for reconfiguring a lot only.

²⁷ Note—some emergency services and police facilities (e.g. water police and search and rescue operations) are dependent on direct water access. The flood levels do not apply to these aspects but other operational areas should be located above the recommended flood level to the greatest extent feasible.

²⁸ Note—for a sewage treatment plant, the recommended flood level applies only to electrical and other equipment that, if damaged by flood water or debris, would prevent the plant from functioning. This equipment should either be protected from damage or designed to withstand inundation.

²⁹ Note—minimum design levels for infrastructure apply to standalone infrastructure only. Where infrastructure is proposed as part of development, the minimum design levels nominated for that development category also apply to the associated infrastructure.



Drainage Deficient Areas

- Drainage Deficient Areas
- Other Elements**
- Local Government Area Boundary
- Locality
- DCDB 21 May 2018 © State Government
- Declared Master Planned Area (see Part 10 - Other Plans)
- Land within Development Control Plan 1 - Kawana Waters which is the subject of the Kawana Waters Development Agreement (see Section 1.2 - Planning Scheme Components)
- Priority Development Area (subject to the *Economic Development Act 2012*)
- Waterways and Waterbodies
- Major Road

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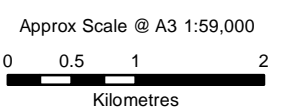


Figure 8.2.7