

9.4.4 Water quality code

9.4.4.1 Application

This code applies to:

- (1) accepted development subject to requirements and assessable development identified as requiring assessment against the Water quality code in the level of assessment tables in Part 5 of this Planning Scheme; and
- (2) all impact assessable development not specifically identified in the level of assessment tables in Part 5 of this Planning Scheme.

Where the following circumstances apply:

- (1) The stormwater management and management of new or expanded artificial waterways sections of the code apply to development that is:
 - (a) Material change of use for urban purposes that involves:
 - (i) a land area of more than 2500m²; or
 - (ii) six or more additional dwellings; or
 - (b) Reconfiguring a lot for urban purposes that:
 - (i) will result in six or more residential allotments or that provides for six or more *dwellings*; or
 - (ii) involves a land area of more than 2500m² and results in an increased number of lots; or
 - (iii) involves operational work disturbing more than 2500 m² of land; or
 - (c) Operational work for urban purposes that involves disturbing greater than 2500 m² of land.
- (2) Development involving waste water management (other than contaminated stormwater and sewage), and industrial or commercial development that is:
 - (a) Material change of use for urban purposes involving waste water discharge; or
 - (b) Reconfiguring a lot for urban purposes involving waste water discharge; or
 - (c) Operational works for urban purposes involving waste water discharge.
- (3) The code also applies when land is proposed to be designated for community infrastructure involving any development described in (1) or (2) above.

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

9.4.4.2 Purpose

The purpose of the Water quality code is to ensure that development including community infrastructure is planned, designed, constructed and operated to manage stormwater and waste water in ways that help protect the environmental values specified in the Environmental Protection (Water) Policy 2009.

The purpose of the code will be achieved through the following overall outcomes:

- (1) Development impacts on the environment, natural landforms, wetlands, water courses and riparian corridors arising from altered stormwater quality and flow are avoided or minimised during development and construction activities; and
- (2) Development impacts of waste water other than contaminated stormwater are avoided or minimised and the quality of surface and groundwater is protected; and

- (3) Development facilitates an efficient use of water resources; and adverse impacts as a result of flooding and the effects of drainage are avoided.

9.4.4.3 Assessment benchmarks

Table 9.4.4.1 – Water quality code:

- **Assessment benchmarks for assessable development and**
- **Requirements for accepted development**

Performance outcomes	Acceptable outcomes
Plan to avoid/minimise new impacts	
<p>PO1 The development is planned and designed considering the land use constraints of the <i>site</i> for achieving stormwater design objectives.</p>	<p>AO 1.1 A <i>site</i> Stormwater quality management plan (SQMP) is prepared, and:</p> <p>is consistent with any local area stormwater management planning, and provides for achievable stormwater quality treatment measures meeting design objectives listed below in Table 9.4.4.2. - Stormwater management design objectives and current best practice environmental management, reflecting land use constraints, such as:</p> <ul style="list-style-type: none"> • erosive, dispersive and/or saline soil types • landscape features (including landform) • management of nutrients of concern • rainfall erosivity <p>Note—Local area stormwater management planning may include Urban Stormwater Quality Management Plans, or Catchment or waterway management plans, Healthy Waters Management Plans, Water Quality Improvement Plans, Natural Resource Management Plans.</p>
<p>PO2 Development does not discharge wastewater to a waterway or off-site unless demonstrated to be best practice environmental management for that <i>site</i>.</p>	<p>AO 2.1 A Wastewater management plan (WWMP) is prepared by a suitably qualified person and addresses:</p> <ul style="list-style-type: none"> (a) wastewater type, and (b) climatic conditions, and (c) water quality objectives (WQOs), and (d) best-practice environmental management, and <p>AO 2.2 The WWMP provides that wastewater is managed in accordance with a waste management hierarchy that:</p> <ul style="list-style-type: none"> (a) avoids wastewater discharges to waterways, or (b) if wastewater discharge to waterways cannot practicably be avoided, minimises wastewater discharge to waterways by re-use, recycling, recovery and treatment for disposal to sewer, surface water and groundwater.

Table 9.4.4.1 – Water quality code:

- **Assessment benchmarks for assessable development and**
- **Requirements for accepted development**

Performance outcomes	Acceptable outcomes
<p>PO3 Any non-tidal artificial waterway is located in a way that is compatible with the land use constraints of the <i>site</i> for protecting water environmental values in existing natural waterways.</p>	<p>AO 3.1 If the proposed development involves an artificial waterway:</p> <ul style="list-style-type: none"> (a) environmental values in downstream waterways are protected, and (b) any groundwater recharge areas are not affected, and (c) the location of the waterway incorporates low lying areas of a catchment connected to an existing waterway, and (d) existing areas of ponded water are included, and <p>AO 3.2 Artificial waterways are located:</p> <ul style="list-style-type: none"> (a) outside natural wetlands and any associated buffer areas, and (b) to minimise disturbing soils or sediments.
Construct to avoid/minimise new impacts	
<p>PO4 Construction activities for the development avoid or minimise adverse impacts on stormwater quality.</p>	<p>AO 4.1 An Erosion and sediment control plan (ESCP) demonstrates that release of sediment-laden stormwater is avoided for the nominated design storm, and minimised when the nominated design storm is exceeded, by addressing design objectives listed below in Table 9.4.4.2 - Stormwater management design objectives for:</p> <ul style="list-style-type: none"> (a) drainage control, and (b) erosion control, and (c) sediment control, and (d) water quality outcomes, and <p>AO 4.2 Erosion and sediment control practices (including any proprietary erosion and sediment control products) are designed, installed, constructed, operated, monitored and maintained, and any other erosion and sediment control practices are carried out in accordance with local conditions and appropriate recommendations from a suitably qualified person, or</p> <p>AO 4.3 The ESCP demonstrates how stormwater quality will be managed in accordance with an acceptable regional or local guideline so that target contaminants are treated to a design objective at least equivalent to Acceptable Outcome AO 4.1.</p>

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Performance outcomes	Acceptable outcomes
Operate to avoid/minimise new impacts	
<p>PO5 Operational activities for the development avoid or minimises changes to waterway hydrology from adverse impacts of altered stormwater quality and flow.</p>	<p>AO 5.1 Development incorporates stormwater flow control measures to achieve the design objectives set out below in Table 9.4.4.2 - Stormwater management design objectives and best practice environmental management, including management of frequent flows, peak flows, and construction phase hydrological impacts.</p>
<p>PO6 Any treatment and disposal of waste water to a waterway accounts for:</p> <ul style="list-style-type: none"> (a) the applicable water quality objectives for the receiving waters, and (b) adverse impact on ecosystem health or receiving waters, and (c) in waters mapped as being of high ecological value, the adverse impacts of such releases and their offset. 	<p>AO 6.1 A WWMP is prepared in accordance with AO 2.1.</p>
<p>PO 7 Wastewater discharge to a waterway is managed in a way that maintains ecological processes, riparian vegetation, waterway integrity, and downstream ecosystem health.</p>	<p>AO 7.1 Wastewater discharge waterways is managed to avoid or minimize the release of nutrients of concern so as to minimize the occurrence, frequency and intensity of coastal algal blooms.</p>

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Performance outcomes	Acceptable outcomes
<p>PO 8 Any non-tidal artificial waterway is managed and operated by suitably qualified persons in ways that demonstrate achievement of water quality objectives in natural waterways.</p>	<p>AO 8.1 The artificial waterway is designed, constructed and managed under the responsibility of a suitably qualified RPEQ with specific experience in establishing and managing artificial waterways.</p> <p>AO 8.2 Monitoring and maintenance programs adaptively manage water quality in the waterway to achieve relevant water quality objectives downstream of the waterway.</p> <p>AO 8.3 Aquatic weeds are managed in ways that achieve a low percentage of coverage of the water surface area (less than 10 per cent). Pests and vectors (such as mosquitoes) are managed such as by avoiding stagnant water areas, providing for native fish predators, and if necessary, other best practices for monitoring and treating pests.</p> <p>AO 8.4 The artificial waterway is managed and operated by a responsible entity under agreement for the life of the waterway. The responsible entity is to implement a deed of agreement for the management and operation of the waterway that:</p> <ul style="list-style-type: none"> (a) identifies the waterway; and (b) states a period of responsibility for the entity; and (c) states a process for any transfer of responsibility for the waterway; and (d) states required actions under the agreement for monitoring of the water quality of the waterway and receiving waters; and (e) states required actions under the agreement for maintaining the waterway to achieve the outcomes of this policy and any relevant approval conditions of the development; and (f) identifies funding sources for the above including bonds, infrastructure charges or levies.

Table 9.4.4.2 - Stormwater management design objectives

Issue		Design Objectives
Drainage control	Temporary drainage works	<ol style="list-style-type: none"> 1. Design life and design storm for temporary drainage works: <ul style="list-style-type: none"> • Disturbed area open for <12 months—1 in 2-year <i>Annual recurrence interval (ARI)</i> event • Disturbed area open for 12–24 months—1 in 5-year <i>Annual recurrence interval (ARI)</i> event • Disturbed area open for > 24 months—1 in 10-year <i>Annual recurrence interval (ARI)</i> event 2. Design capacity excludes minimum 150 millimetres <i>freeboard</i> 3. Temporary culvert crossing—minimum 1 in 1-year <i>Annual recurrence interval (ARI)</i> hydraulic capacity
Erosion control	Erosion control measures	<ol style="list-style-type: none"> 1. Minimise exposure of disturbed soils at any time 2. Divert water run-off from undisturbed areas around disturbed areas 3. Determine the erosion risk rating using local rainfall erosivity, rainfall depth, soil-loss rate or other acceptable methods 4. Implement erosion control methods corresponding to identified erosion risk rating
Sediment control	Sediment control measures Design storm for sediment control basins Sediment basin dewatering	<ol style="list-style-type: none"> 1. Determine appropriate sediment control measures using: <ul style="list-style-type: none"> • potential soil loss rate, or • monthly erosivity, or • average monthly rainfall 2. Collect and drain <i>stormwater</i> from disturbed soils to sediment basin for design storm event: <ul style="list-style-type: none"> • design storm for sediment basin sizing is 80th per cent five-day event or similar 3. <i>Site</i> discharge during sediment basin dewatering: <ul style="list-style-type: none"> • TSS < 50 milligram/litre TSS, and • Turbidity not >10 per cent receiving waters turbidity, and • pH 6.5–8.5
Water quality	Litter and other waste, hydrocarbons and other contaminants	<ol style="list-style-type: none"> 1. Avoid wind-blown litter; remove gross pollutants 2. Ensure there is no visible oil or grease sheen on released waters 3. Dispose of waste containing <i>contaminants</i> at authorised facilities
Waterway stability and flood flow management	Changes to the natural waterway hydraulics and hydrology	<ol style="list-style-type: none"> 1. For peak flow for the 1-year and 100-year <i>Annual recurrence interval (ARI)</i> event, use constructed sediment basins to attenuate the discharge rate of <i>stormwater</i> from the <i>site</i>