

State Planning Policy 4/10 Healthy Waters

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Department of Environment and Resource Management

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Cover photo (Shaun Leinster) illustrates a bioretention swale during rainfall. The system is located within a development in South East Queensland and is approximately seven years old. The system was designed to deliver treatment of suspended solids and nutrients as well as provide hydrologic management of run-off from the residential dwellings and road (i.e. dampen stormwater flows). In this case the development layout was carefully considered very early in the design to ensure there was suitable space within the road reserve for the swale bioretention system, driveway crossovers were avoided and the slopes were appropriate. The bioretention swale combines with street trees and pedestrian pathways to form a green linkage through the community.

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Background

The Minister for Infrastructure and Planning adopted the State Planning Policy for Healthy Waters on 15 December 2010.

Making the State Planning Policy for Healthy Waters

The State Planning Policy for Healthy Waters was made under section 775 of the *Sustainable Planning Act 2009* and chapter 2, part 4 of the *Integrated Planning Act 1997*.

Commencement

The State Planning Policy for Healthy Waters takes effect on 28 February 2011.

Explanatory statement

Purpose of the policy

This State Planning Policy for Healthy Waters (the policy) is intended to ensure that development¹ is planned, designed, constructed and operated to manage stormwater and waste water in ways that help protect the water environmental values specified in the Environmental Protection (Water) Policy 2009² (EP water policy).

Need to protect water quality

Urban stormwater run-off contributes to poor water quality in waterways, which can harm aquatic ecosystems and limit human water use. Sustained high population growth in Queensland's catchments is increasing the threat to water environmental values. Unless well managed, urban stormwater causes contaminants such as nutrients, sediment and rubbish to enter waterways. Waterway erosion can also be caused by the concentration of stormwater flows and such flows can disrupt ecosystem health. Similarly, development that discharges waste water to waterways can mobilise contaminants that affect water environmental values.

Managing water quality to protect environmental values will ensure waterways and their aquatic ecosystems are in a condition to better cope with climate change impacts.

Under the *Environmental Protection Act 1994*, the EP water policy establishes environmental values³ and water quality objectives for Queensland waters through community consultative processes. Environmental values for water are specified in Part 3 of the EP water policy. The EP water policy also sets out policies for managing waters that may be affected by an activity that releases wastewater or contaminants.

Achieving the water quality objectives for a water body means the corresponding environmental values and uses of that water will be protected. Decision makers involved in land use planning, development assessment and natural resource management collectively assist in protecting environmental values by contributing towards achieving water quality objectives.

¹ "development" and "urban purposes" as defined under the *Sustainable Planning Act 2009* and Section 2 of the policy

² The EP water policy 1997 was remade as the *Environmental Protection (Water) Policy 2009* on 28 August 2009.

³ The environmental values of waters relate to the water's aquatic ecosystems, including its biota, physical form, riparian vegetation, flow and physicochemical water quality. Water quality objectives are the indicators of these components of the water's aquatic ecosystem.

This policy sets out planning requirements and development assessment criteria intended to ensure development is carried out in ways that help achieve the relevant water quality objectives of the EP water policy. These policy provisions allow for regional variations in climate and are based on modelling of nine climatic regions using rainfall data records from each Queensland region.

The policy addresses stormwater, waste water, and waterway management, under the *Sustainable Planning Act 2009* (the Act), in planning and development assessment. However, the policy does not address potable water, water supply, water resource or groundwater management, or stormwater run-off in rural areas outside the Act jurisdiction for planning and development assessment.

The policy applies to:

- the stormwater management of development proposals that comprise at least six lots or dwellings
- the waste water management of development for urban purposes if discharging waste water to a waterway
- planning at all scales, including new ‘green field’ urban areas as well as infilling and redevelopment of existing built-up areas.

Outcome sought by the policy

The policy seeks to ensure development for urban purposes under the Act, 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 EP water policy.

Specific direction is provided on urban stormwater management, waste water management, and management of non-tidal artificial waterways based on the following principles:

The specific ways of managing urban stormwater quality are based on achieving design objectives that reflect the regional climate and a location’s landscape characteristics.

Development avoids adverse impacts on Queensland waters or, where this is not feasible, adverse impacts are minimised and any residual adverse impacts offset⁴.

Development is undertaken in accordance with adaptive management.

The policy supports and complements existing policies under related legislation⁵ including:

- *Building Act 1975* and the Queensland Development Code (QDC)
- *Plumbing and Drainage Act 2002*
- *Environmental Protection Act 1994*
- *Water Act 2000*
- *Coastal Protection and Management Act 1995*
- *Vegetation Management Act 1999*.

This policy also supports many existing water quality management policies and practices including:

- construction phase erosion and sediment controls and initiatives in water sensitive urban design

⁴ Consistent with the principles of the Queensland Government’s Environmental Offsets Policy and DERM advice in Waste Water Discharge to Aquatic Environments see Section 5 of the State Planning Policy Guideline for Healthy Waters (the guideline).

⁵ See the guideline for details of the relationships to other Act related aspects of legislation (Appendix 3).

- regional and local council initiatives such as many existing development assessment codes for stormwater and waste water management, urban stormwater and waste water management plans and community based natural resource management plans
- Australian and Queensland government policies and plans on water quality management such as the National Water Initiative, National Water Quality Management Strategy, and Water Quality Improvement Plans.

Implementing the policy

This policy will influence those land use planning and development decisions that may individually or collectively affect water environmental values. Planning instruments will need to reflect the policy provisions on water quality planning and development assessment. Until that time, the policy will be applied in assessment of development applications including the development assessment code at Appendix 1 of the policy. The policy will therefore need to be applied and considered by state agencies, local councils and developers.

Planning schemes may incorporate local water quality management provisions provided these do not result in worse water quality management outcomes than those set out in this policy.

The policy is supported by the State Planning Policy Guideline for Healthy Waters (the guideline) which further details the implementation of this policy and identifies key resource materials including:

- Urban Stormwater Quality Planning Guideline
- Implementing Policies and Plans for Managing Nutrients of Concern for Coastal Algal Blooms in Queensland
- regionally based design objectives⁶ for management of urban stormwater quality
- urban stormwater quality and waste water management plans⁷.

Reflecting regional plans in designated regions

This policy is consistent with and reflects the South East Queensland Regional Plan 2009–2031 (SEQ regional plan) and Far North Queensland Regional Plan 2009–2031 (FNQ regional plan). These plans provide for the adoption of water sensitive design for achieving water quality objectives as set out in the Environmental Protection (Water) Policy 2009 (EP water policy). The regional plans and the policy support the use of adaptive management and achievement of design objectives for management of urban stormwater and waste water.

The SEQ and FNQ regional plans rely on the EP water policy to identify the environmental values of particular river systems and other waters, and to provide detailed direction on urban stormwater management and waste water management to protect these environmental values.

1. Policy outcome

Outcome sought by the policy

- 1.1 Development under the *Sustainable Planning Act 2009* (the Act), including community infrastructure, is planned, designed, constructed and operated to manage stormwater and waste

⁶ Design objectives are set out in Chapter 2 of the Urban Stormwater Quality Planning Guideline. These load based operational design objectives for each climatic region in Queensland take account of regional rainfall characteristics and regionally appropriate achievable design solutions.

⁷ Waste water management plans include Sewage Management Plans and Trade Waste Management Plans

water in ways that help protect the environmental values specified in the Environmental Protection (Water) Policy 2009.

2. Application of the policy

State Planning Policy for Healthy Waters and State Planning Policy Guideline for Healthy Waters

- 2.1 The State Planning Policy for Healthy Waters is a statutory instrument under the Act.
- 2.2 The policy has effect when local planning instruments are made or amended, when development applications are assessed, and when land is designated for community infrastructure. The policy would also be used to help shape statutory regional plans.
- 2.3 When designating land for community infrastructure, a minister or local government must consider the development outcomes set out in Section 4 of this policy.
- 2.4 The policy and guideline provide information and advice about implementing the policy. The guideline is extrinsic material under the *Statutory Instruments Act 1992*, section 15.
- 2.5 Terms used in the policy and guideline have the same meaning as defined in the Act and the EP water policy. The glossary in Appendix 2 explains particular terms used in the policy.

Areas to which the policy applies

- 2.6 The policy applies throughout the state.

Development to which the policy applies

- 2.7 **For stormwater⁸ management and management of new or expanded non-tidal artificial waterways**, the policy applies to development that is:
 - a. material change of use for urban purposes⁹ that involves
 - i. greater than 2500 m² of land¹⁰; or
 - ii. 6 or more additional dwellings; or
 - b. reconfiguring a lot for urban purposes that
 - i. would result in 6 or more residential allotments¹¹ or that provides for 6 or more dwellings; or
 - ii. involves greater than 2500 m² of land¹⁰ and results in an increased number of lots; or
 - iii. is associated with operational work disturbing greater than 2500 m² of land; or
 - c. operational work for urban purposes that involves
 - i. disturbing¹² greater than 2500 m² of land.
- 2.8 **For waste water¹³ management (other than contaminated stormwater and sewage)**, the policy applies to development that is 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.
- 2.9 The policy also applies when land is proposed to be designated for community infrastructure involving any development described in sections 2.7 and 2.8.

⁸ See Appendix 2 for definition

⁹ See Appendix 2 for definition.

¹⁰ Land area includes areas to be disturbed as well as the balance area.

¹¹ Residential allotments are lots that may be developed for residential purposes

¹² Moving or otherwise disturbing soil

¹³ See Appendix 2 for definition

Development outside the scope of the policy

2.10 The policy does not apply to:

- a. making a material change of use or carrying out operational work for the purposes of, or associated with, a single detached dwelling; or
- b. making a material change of use of premises for an environmentally relevant activity under the *Environmental Protection Act 1994*; or
- c. making a material change of use or operational works made assessable by Schedule 3 of the *Sustainable Planning Act 2009* ; or
- d. building work that is assessable only against the *Building Act 1975*; or
- e. plumbing and drainage work regulated under the *Plumbing and Drainage Act 2002*.

3. Making or amending a planning instrument

The policy outcome and regional plans¹⁴

3.1 The making or amendment of a regional plan can assist in achieving the policy outcome by:

- a. identifying the policies applicable in the region for development assessment including erosion and sediment control, water sensitive urban design, nutrient hazardous areas and waste management consistent with protecting water environmental values in the regional catchments
- b. identifying the urban stormwater management design objectives applicable to the region consistent with protecting water environmental values
- c. identifying areas that drain directly into waters mapped as being of high ecological value for urban or future urban purposes only if relevant water environmental values can be protected.

3.2 For further information on the policy outcome and regional plans, refer to section 3 of the guideline.

Achieving the policy outcome through a local planning instrument

3.3 When making or amending a local planning instrument, the policy outcome is achieved when:

- a. land allocated or zoned for urban or future urban purposes is compatible with minimising disturbance to natural drainage, erosion risk, impact on groundwater levels and landscape features
- b. the local planning instrument clearly identifies the measures and outcomes required by development to protect water environmental values
- c. areas that drain directly into waters mapped as being of high ecological value¹⁵ are not allocated or zoned for urban or future urban purposes unless relevant water quality objectives can be achieved
- d. the local planning instrument is in accordance with any relevant Total Water Cycle Management Plan¹⁶, Healthy Waters Management Plan¹⁷, and groundwater protection planning¹⁸
- e. the local planning instrument is in accordance with any relevant waste management planning¹⁹

¹⁴ See Appendix 2 for definition

¹⁵ See Appendix 2 for definition and location of available mapping

¹⁶ Total Water Cycle Management Plans dealing with management of urban stormwater quality and flow should be made in accordance with the Urban Stormwater Quality Planning Guideline .and guidelines issued under the EP water policy.

¹⁷ Healthy Waters Management Plans are about ways to improve water quality under s24 of the EP water policy.

¹⁸ Planning may include water resource planning under the *Water Act 2000* and local area planning for on-site wastewater treatment facilities.

¹⁹ Waste management planning includes plans about managing sewage and trade waste (such as under s20 and 22 of the EP water policy respectively), and on-site wastewater treatment facilities.

- f. waste disposal activities and facilities²⁰ are not located in areas with highly permeable soils or a high groundwater table and take account of topography and existing facilities
 - g. development to which this policy applies is assessable or self-assessable under the local planning instrument unless that development is trunk infrastructure²¹
 - h. the code set out at Appendix 1 of this policy is incorporated in the local planning instrument in a way that provides for the same or better water quality management outcomes as that code
 - i. the local planning instrument is supported by a planning scheme policy that states that the information that may be requested for assessing development to which the policy applies, in accordance with this policy and the guideline
 - j. the local planning instrument provides that development in nutrient hazardous areas²² is located, designed, constructed and operated to avoid the mobilisation and release of nutrients of concern²³ for coastal algal blooms.
- 3.4 For further information on how to achieve the policy outcome through a local planning instrument, refer to Section 3 of the guideline.

4. Development assessment

Achieving the policy outcome through development assessment and designating community infrastructure

- 4.1 Development the subject of a development application made before this policy takes effect is not subject to the policy.
- 4.2 The policy outcome in section 1.1 is achieved for development to which the policy applies if, in accordance with the code at Appendix 1, the development:
- a. avoids or minimises development impacts arising from altered stormwater quality and flow by providing for development and construction activities in accordance with acceptable design objectives²⁴
 - b. avoids or minimises development impacts of waste water (other than contaminated stormwater) on water quality objectives
 - c. avoids or minimises development impacts arising from the creation or expansion of non-tidal artificial waterways such as urban lakes.

Acceptable circumstances for not fully achieving the policy outcome

- 4.3 Despite section 4.2 above, the policy outcome may not be fully achieved for development if;
- a. there is a development commitment²⁵ for the development; and
 - b. the development commitment restricts the ability to achieve the outcomes in 4.2.
- 4.4 However, the development complies with this policy only if the outcomes in section 4.2 are achieved for the development to the maximum extent practicable, consistent with the development commitment.²⁶

²⁰ Waste disposal facilities include those associated with landfills, refuse transfer stations, resource recovery facilities (e.g. oil, recycling, metals recovery) sewage treatment plants, onsite effluent disposal systems, wastewater irrigation systems, feedlots, poultry farming, industrial liquid waste holding areas, effluent refuse areas and biosolid application areas.

²¹ See *Sustainable Planning Act 2009* Statutory Guideline 01/09 for definition

²² See Appendix 2 for definition

²³ See Appendix 2 for definition

²⁴ See Appendix 2 for definition of water quality objectives and design objectives

²⁵ See Appendix 2 for definition of development commitment

²⁶ Further advice on how to achieve the policy outcome through development assessment and designation of community infrastructure is described in Section 4 of the guideline.

5. Information and advice about the policy

Sources of information and advice

- 5.1 The Queensland Department of Environment and Resource Management can provide advice on the implementation of the policy, including relevant environmental values, water quality objectives, design objectives, stormwater quality management and waste water management, and reflecting the policy in a planning instrument.
- 5.2 The EP water policy contains further information about environmental values, water quality objectives, and the management of activities that may affect water.
- 5.3 The Queensland Department of Infrastructure and Planning can provide advice on reflecting the policy in a planning instrument, and the operation of the Integrated Development Assessment System (IDAS).

Review of the policy

- 5.4 The policy will be reviewed within five years to assess its effectiveness, particularly in light of ongoing research on stormwater management and water sensitive urban design. The review will take particular note of the implementation of the policy across all regions, the development types addressed, and the operation of the assessment code at Appendix 1.

Appendix 1

Development Assessment Code

Application

This code is a code for the Integrated Development Assessment System (IDAS) under the *Sustainable Planning Act 2009* (the Act). This code will apply for assessing development described in Sections 2.7 to 2.9 of the policy.

The code also applies to development proposed to be designated for community infrastructure involving any development described in sections 2.7 and 2.8.

Purpose and overall outcomes

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

This purpose of the code is achieved if development to which the code applies:

- a. avoids and minimises development impacts arising from altered stormwater quality and flow by providing for development and construction activities in accordance with acceptable design objectives (Part A of the code); and
- b. avoids and minimises development impacts of waste water other than contaminated stormwater (Part B of the code); and
- c. avoids and minimises development impacts arising from the creation or expansion of non-tidal artificial waterways such as urban lakes (Part C of the code).

Using this code

The code comprises three parts. Each part addresses a particular waterway health issue. Part A addresses urban stormwater management. Part B addresses point source waste water management. Part C addresses non-tidal artificial waterways (Part C).

Each code part states a purpose, and performance outcomes which must be achieved in order for development to comply with the code. The performance outcomes help to protect receiving water environmental values stated in the Environmental Protection (Water) Policy 2009 (EP water policy).

At least one acceptable outcome is provided for most performance outcomes. An acceptable outcome is a way in which the relevant performance outcome can be met. Consequently development that complies with all of the acceptable outcomes for a particular performance outcome complies with the performance outcome. If development does not comply with the acceptable outcomes, or if no acceptable outcome has been stated for a performance outcome, the development must comply with the performance outcome. If acceptable outcomes involve making one or more management plans (for example, a site stormwater quality management plan, or an erosion and sediment control plan) the management plans may form part of an overall site management plan that integrates environmental management for the development. A management plan is not intended to be an acceptable outcome itself, but a means to develop and implement actions to achieve the relevant performance outcome.

For Part A of the code the acceptable outcomes refer to urban stormwater design objectives that allow for regional variations in climate and landscape. These are based on modelling of nine climatic regions using rainfall data records from each region in Queensland. For erosion and sediment control the design objectives account for local rainfall, soil and landscape features.

When determining if development meets a performance outcome, the assessment manager must take a precautionary approach,²⁷ that is, avoid using a lack of full scientific certainty as a reason for not taking action to minimise potential adverse affects on water environmental values. This is important for considering issues such as climate change, which may affect water environmental values.

Relationship with other planning instruments

Local planning instruments may include additional or different performance outcomes that equal or exceed those in this code. Identical or better performance outcomes in local planning instruments are consistent with this code. However, if a local planning instrument does not provide for adequate protection of water environmental values consistent with this policy, including this code, the policy prevails to the extent of any inconsistency²⁸.

The SPP Guideline more fully explains the relationships among planning instruments that might affect waterway health and water quality issues.

Part A

Urban stormwater management

Purpose

The purpose of this part is to help protect receiving water environmental values from adverse development impacts arising from altered urban stormwater quality and altered stormwater flow, by managing development and construction activities in accordance with stormwater design objectives²⁹.

Performance outcomes	Acceptable outcomes
Protecting Water Quality	
Performance outcome PO1 The development is compatible with the land use constraints of the site for achieving stormwater design objectives.	Acceptable outcome AO1.1 The nature, design, and stormwater management of the development is in accordance with design objectives stated in Chapter 4 (section 4.9) of the State Planning Policy Guideline for Healthy Waters (the guideline) and Prepare a site stormwater quality management plan (SQMP) that: <ol style="list-style-type: none"> is consistent with any local area stormwater water management planning; and provides for achievable stormwater quality treatment measures reflecting land use constraints, such as soil type, landscape features (including landform), nutrient hazardous areas, acid sulfate soil, and rainfall erosivity.

²⁷ Section 5 of the *Sustainable Planning Act 2009* requires that decision-making processes apply the precautionary principle.

²⁸ Under s43 of the *Sustainable Planning Act 2009*

²⁹ See Appendix 2 for definition of design objectives

<p>Performance outcome PO2</p> <p>The entry of contaminants into, and transport of contaminants, in stormwater is avoided or minimised.</p>	<p>Acceptable outcome AO2.1</p> <p>Any development application incorporates:</p> <ul style="list-style-type: none"> • stormwater management measures to achieve relevant design objectives outlined in Chapter 4 of the guideline • management of nutrients of concern and acid sulfate soils. <p>and</p> <p>Prepare a site stormwater quality management plan (SQMP) that::</p> <ol style="list-style-type: none"> a. accounts for development type, construction phase, local landscape, climatic conditions and design objectives in accordance with the guideline; and b. is consistent with the Queensland Acid Sulfate Soil Technical Manual.
<p>Performance outcome PO3</p> <p>Construction activities for the development avoid or minimise adverse impacts on stormwater quality.</p>	<p>Acceptable outcome AO3.1</p> <p>Any development application for the development is accompanied by an erosion and sediment control plan (ESCP) prepared in accordance with the guideline that demonstrates 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 in the guideline, Chapter 4, for:</p> <ul style="list-style-type: none"> • drainage control; • erosion control; • sediment control; and • water quality outcomes. <p>Addressing the design objectives may include enhancing the achievement of some objectives if achievement of other objectives is impractical.</p> <p>and</p> <p>Acceptable outcome AO3.2</p> <p>Erosion and sediment control practices including any proprietary erosion and sediment control products³⁰ 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 person³¹.</p> <p>or</p> <p>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 AO3.1.</p>

³⁰ Such as SQID (stormwater quality intervention device) and flocculation products

³¹ See Glossary at Appendix 2

Protection of Natural Flows	
Performance outcome PO4 Construction and operation activities for the development avoid or minimise changes to waterway hydrology from adverse impacts of altered stormwater quality and flow.	Acceptable outcome AO4.1 Development incorporates stormwater flow control measures to achieve at least the design objectives set out in Chapter 4 of the guideline. Both the construction and operational phases for the development comply with advice and the design objectives in Chapter 4 of the guideline including management of frequent flows, peak flows, and construction phase hydrological impacts.

Part B

Point source waste water management (other than contaminated stormwater and sewage)

Purpose

The purpose of this part is to protect receiving water environmental values from waste water impacts (other than contaminated stormwater and sewage) on water quality.

Performance outcomes	Acceptable outcomes
Performance outcome PO1 Development does not discharge waste water ³² to a waterway or external to the site unless demonstrated to be best practice environmental management for that site.	Acceptable outcome AO1.1 A waste water management plan (WWMP) is prepared by a suitably qualified person The WWMP accounts for; <ul style="list-style-type: none"> a. waste water type; b. climatic conditions; c. WQOs; and d. best practice environmental management. The WWMP provides that waste water is managed in accordance with a waste management hierarchy that: <ul style="list-style-type: none"> a. avoids waste water discharge to waterways; or b. if waste water discharge to waterways cannot practicably be avoided, minimises waste water discharge to waterways by re-use, recycling, recovery and treatment for disposal to sewer, surface water and groundwater.

³² See Appendix 2 for the meaning of this term

<p>Performance outcome PO2</p> <p>Any treatment and disposal of waste water to a waterway accounts for:</p> <ol style="list-style-type: none"> the applicable water quality objectives for the receiving waters; and adverse impact on ecosystem health or receiving waters; and in waters mapped as being of high ecological value, the adverse impacts of such releases and their offset³³. 	<p>Acceptable outcome AO2.1</p> <p>Compliance with this outcome can be demonstrated by developing a waste water management plan (WWMP) prepared by a suitably qualified person³⁴ with content taking account of at least those factors listed in Performance Outcome PO2.</p>
<p>Performance outcome PO3</p> <p>Waste water discharge to a waterway from nutrient hazardous areas or acid sulfate soil areas is managed in a way that maintains ecological processes, riparian vegetation, waterway integrity, and downstream ecosystem health.</p>	<p>Acceptable outcome AO3.1</p> <p>Waste water discharge to waterways is managed to avoid or minimise the release of nutrients of concern so as to minimise the occurrence, frequency and intensity of coastal algal blooms.</p> <p>and</p>
	<p>Acceptable outcome AO3.2</p> <p>Development in coastal catchments³⁵ avoids, or minimises and appropriately manages soil disturbance or altering natural hydrology in nutrient hazardous areas³⁶ and acid sulfate soil areas³⁷.</p> <p>Compliance with this outcome can be demonstrated by following the management advice in the Implementing Policies and Plans for Managing Nutrients of Concern for Coastal Algal Blooms in Queensland and associated technical guideline.</p> <p>and</p>
	<p>Acceptable outcome AO3.3</p> <p>Development in coastal catchments:</p> <ul style="list-style-type: none"> avoids lowering groundwater levels where potential or actual acid sulfate soils³⁸ are present. manages waste waters so that: <ol style="list-style-type: none"> the pH of any waste water discharged is maintained between 6.5 and 8.5 to avoid mobilisation of acid, iron, aluminium, and metals³⁹; and

³³ Consistent with the principles of the Queensland Government's Environmental Offsets Policy and agency advice in Waste water discharge to aquatic environments. See section 5 of the guideline.

³⁴ See Appendix 2 for the meaning of this term

³⁵ See Appendix 2 for the meaning of this term

³⁶ See Appendix 2 for the meaning of this term

³⁷ See Appendix 2 for the meaning of this term

³⁸ See Appendix 2 for the meaning of this term

³⁹ except where natural pH is below this range. In such cases, release of untreated wastewater may be inappropriate due to naturally acidic waters, different forms of acidity and presence of dissolved metals in waste waters.

	<ul style="list-style-type: none"> b. holding times of neutralised waste waters ensures the flocculation and removal of any dissolved iron prior to release; and c. visible iron floc⁴⁰ is not present in any discharge; and d. precipitated iron floc is contained and disposed of; and e. waste water and precipitates that cannot be contained and treated for discharge on site are removed and disposed of through trade waste or another lawful method
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Part C

Non-tidal artificial waterways ('the waterway')

Purpose

The purpose of this part is to protect receiving water environmental values from development impacts arising from the creation or expansion of non-tidal artificial waterways such as urban lakes.

Performance outcomes	Acceptable outcomes
Protecting water quality in existing natural waterways	
Performance outcome PO1 The waterway is not designed only for stormwater flow management or stormwater quality management.	Acceptable outcome AO1.1 The waterway is designed and managed for any of the following end use purposes: <ul style="list-style-type: none"> • amenity including aesthetics, landscaping, and recreation; • flood management; • stormwater harvesting as part of an integrated water cycle management plan; • aquatic habitat. and The end use purpose is designed and operated in a way that protects water environmental values.
Performance outcome PO2 The waterway is located in a way that is compatible with the land use constraints of the site for protecting water environmental values in existing natural waterways.	Acceptable outcome AO2.1 Where relevant: <ul style="list-style-type: none"> a. environmental values in downstream waterways are protected; b. any groundwater recharge areas are not affected; c. the location of the waterway incorporates low lying areas of a catchment connected to an existing waterway; d. any existing areas of ponded water are included; and

⁴⁰ See Appendix 2 Glossary for the meaning of this term

	<p>Acceptable outcome AO2.2</p> <p>Waterways are located:</p> <ol style="list-style-type: none"> outside natural wetlands and any associated buffer areas; and to avoid disturbing soils or sediments and to avoid altering the natural hydrologic regime in acid sulfate soil and nutrient hazardous areas.
<p>Performance outcome PO3</p> <p>The waterway is located in a way that is compatible with existing tidal waterways.</p>	<p>Acceptable outcome AO3.1</p> <p>Where the waterway is located adjacent to, or connected to, a tidal waterway by means of a weir, lock, pumping system or similar:</p> <ol style="list-style-type: none"> there is sufficient flushing or a tidal range of >0.3m; or any tidal flow alteration does not adversely impact on the tidal waterway; or there is no introduction of salt water into freshwater environments.
<p>Performance outcome PO4</p> <p>The construction phase for the waterway is compatible with protecting water environmental values in existing natural waterways.</p>	<p>Acceptable outcome AO4.1</p> <p>Erosion and sediment control measures are incorporated during construction to achieve design objectives set out in Chapter 4 of the guideline.</p>
<p>Performance outcome PO5</p> <p>Stormwater overflows from the waterway provide for the achievement of water quality objectives in existing natural waterways.</p>	<p>Acceptable outcome AO5.1</p> <p>Stormwater run-off that may enter the non-tidal waterway is pre-treated in accordance with the guideline design objectives, water quality objectives of local waterways, and any relevant local area stormwater management plan.</p>
Designing, managing and operating the non-tidal artificial waterway	
<p>Performance outcome PO6</p> <p>The waterway is designed, managed and operated by suitably qualified persons.</p>	<p>Acceptable outcome AO6.1</p> <p>To help achieve water quality objectives in and downstream of the waterway, the waterway is designed, constructed and managed under the responsibility of a suitably qualified registered professional engineer, Queensland with specific experience in establishing and managing artificial waterways.</p>
<p>Performance outcome PO7</p> <p>The waterway is managed and operated in ways that demonstrate achievement of water quality objectives in natural waterways.</p>	<p>Acceptable outcome AO7.1</p> <p>Monitoring and maintenance programs adaptively manage water quality in the waterway to achieve relevant water quality objectives downstream of the waterway.</p> <p>and</p> <p>Acceptable outcome AO7.2</p> <p>Aquatic weeds are managed in ways that achieve a low percentage of coverage of the water surface area (less than 10%). Pests and vectors (such as mosquitoes) are managed such as by avoiding stagnant water areas, providing for native fish predators,</p>

	<p>and, if necessary, other best practices for monitoring and treating pests⁴¹.</p> <p>and</p> <p>Acceptable outcome AO7.3</p> <p>The waterway is managed and operated by a responsible entity⁴² under agreement for the life of the waterway.</p> <p>The responsibility entity is to implement a deed of agreement for the management and operation of the waterway that:</p> <ol style="list-style-type: none"> identifies the waterway; states a period of responsibility for the entity for the management and operation of the waterway; states a process for any transfer of responsibility for the waterway; states required actions under the agreement for monitoring of the water quality of the waterway and receiving waters 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 identifies funding sources for the above including bonds, headworks charges or levies.
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⁴¹ See Part C of Annex 1 of the SPP guideline for information and guidelines that may assist.

⁴² Responsible entity such that there is a clear chain of management responsibility

Appendix 2

Glossary

Where indicated, some of the following terms are defined by the *Sustainable Planning Act 2009* (the Act) and the *Environmental Protection Act 1994* (the EP Act) and were consistent with those Acts at the time this policy was made. If those definitions are subsequently amended, the changed definitions would prevail over those used in this policy.

Acid sulfate soils—soil or sediment containing highly acidic soil horizons or layers from the oxidation of iron sulfides (actual acid sulfate soils) and/or soil or sediment containing iron sulfides or other sulfidic material that has not been exposed to air and oxidised (potential acid sulfate soils). The term 'acid sulfate soil' generally includes both actual and potential acid sulfate soils. Actual and potential acid sulfate soils are often found in the same soil profile, with actual acid sulfate soils generally overlying potential acid sulfate soil horizons. Pollutants associated with the disturbance of acid sulfate soils and groundwaters include acid, aluminium, heavy metals and metalloids such as arsenic. See State Planning Policy 2/02 Planning and Management of Development Involving Acid Sulfate Soils for further details.

Coastal catchment—catchment of a waterway that flows to the coast—excludes coastal catchments that drain to a dam or similar substantive structure that restricts downstream flow.

Coastal algal blooms—blooms of algae in coastal or estuarine waters. Algae include photosynthetic organisms, both microalgae and macroalgae, as well as cyanobacteria (often referred to as blue-green algae) and can occur in non-toxic and toxic forms—the latter having the most significant negative impacts on the environment, public health and local economy. A bloom involves an increase in algae numbers to such an extent as to: discolour the water, impart taste, odours, toxins and/or other compounds to the water, adversely affect the other biotic components of the aquatic ecosystem or generally render the water unsuitable for its intended use (from Queensland Harmful Algal Bloom Plan 2002). A common toxic bloom-forming algae causing adverse impacts in Queensland waters is the cyanobacterium *Lyngbya majuscula* (Lyngbya). However other algal species also occur that have the potential to impact on environment, natural resources and public health.

Contaminant—as defined under schedule 9 of the Environmental Protection Regulation 2008 (subordinate legislation under the EP Act) which lists prescribed water contaminants.

Contaminated stormwater—stormwater that contains a contaminant.

Design objectives—quantifiable objectives for temporary and permanent water management infrastructure. They reflect achievable and tested regionally specific designs for planning and development to ensure water sensitive urban design (WSUD) is implemented in a regionally consistent way to help achieve water quality objectives (WQOs) in receiving waterways.

- For stormwater management, the typical design objectives include rainfall capture, peak discharge limits, and minimum reductions in contaminant loads for nutrients, gross pollutants, and total suspended solids.
- For erosion and sediment control, the typical design objectives include drainage control, erosion control, sediment control, and water quality outcomes such as total suspended solids, and turbidity.

Recommended minimum stormwater design objectives are shown in Chapter 2 of the 'Urban Stormwater Quality Planning Guideline' (2010).

Design storm—the average return interval of the type of storm for which the stormwater treatment system is designed. Further information is in the Queensland Urban Drainage Manual (NRW 2007).

Development commitment—any of the following:

- as of the date of commencement of this policy, development with a valid preliminary approval; or

- development that arises from and is necessary to give effect to a valid development approval
- development that is:
 - a) consistent with the relevant regional plan or any applicable state planning regulatory provision; or
 - b) explicitly anticipated by and consistent with the relevant zone (or equivalent), all applicable codes, and any other requirements of the relevant planning scheme⁴³ or other local planning instrument
- development that is located within a state development area⁴⁴ and is consistent with the development scheme prepared for the state development area
- development consistent with a designation for community infrastructure made before this policy commenced
- for development that is government supported transport infrastructure, development that is consistent with a government approval to construct given before the date of commencement of this policy⁴⁵

Note: A development commitment does **not** include circumstances where the planning scheme makes the **principle** of the use subject to further planning or environmental assessment.

Environmental offsets—an action taken to compensate for a negative environmental impact that might result from development. Environmental offsets are positive measures taken to counterbalance negative environmental impacts that cannot otherwise be avoided or minimised. An offset may be located within or outside the geographic site of the activity or development and should be legally secured.

Note: Further information on how to apply offsets is available in the Queensland Government Environmental Offsets Policy 2008 (see <www.derm.qld.gov.au>).

Environmental values—as defined in section 9 of the *Environmental Protection Act 1994*:

(a) a quality or physical characteristic of the environment that is conducive to ecological health or public amenity or safety

or

(b) another quality of the environment identified and declared to be an environmental value under an environmental protection policy or regulation.

The EP water policy 2009 states the environmental values of waters.

EP water policy—Environmental Protection (Water) Policy 2009 (EP water policy) under the *Environmental Protection Act 1994*.

Groundwater—subartesian water or artesian water.

High ecological value (HEV)—as defined under schedule 2 of the EP water policy means waters in which the biological integrity of the water is effectively unmodified or highly valued.

Note: The Department of Environment and Resource Management (DERM) has identified these areas as part of the ongoing roll out of Schedule 1 of the EP water policy. The maps are available on the DERM website or by contacting your nearest DERM office. <www.derm.qld.gov.au>

Iron floc—particulate deposits of iron (ferric) compounds which under oxygenated conditions clump together to form a ‘coat’ on water surfaces and can often give water a rust brown appearance resulting in staining of pipes and structures. A common way to remove iron from waters is to neutralise and aerate to allow the iron floc to precipitate and settle out of solution.

Local planning instrument—a planning scheme, temporary local planning instrument, or planning scheme policy made under the *Sustainable Planning Act 2009*.

⁴³ Certain planning scheme requirements may be contained in planning scheme policies, for example standards specified in a scheme code may be set out in a planning scheme policy.

⁴⁴ See Glossary Appendix 2 for definition

⁴⁵ Government supported transport infrastructure has the meaning given in Schedule 6 of the Transport Infrastructure Act 1994.

Non-tidal artificial waterway—includes access channels, constructed urban lakes or other bodies of water that are designed to be:

- permanent bodies of open water
- fringed with hard edges or emergent macrophytes
- indirectly connected to tidal water (by a lock or weir or other system)
- or
- artificial lakes (generally land locked without a direct connection to tidal waterways).

For the purposes of the policy, non-tidal artificial waterways do not include waterbodies used only for aquaculture or agricultural activities.

Nutrients of concern—nutrients or other trace elements that can enhance the growth of algae and include nitrogen, phosphorus, iron or organic matter (dissolved organic carbon). These elements have been shown to increase the severity of *Lyngbya majuscula* (cyanobacterium) blooms. See Nutrient hazardous areas.

Nutrient hazardous areas—areas containing appreciable levels of nutrients of concern that may contribute to increased occurrence, frequency or intensity of coastal algal blooms (particularly nitrogen, phosphorus, iron and organic matter). Hazard maps are used to spatially represent nutrient hazardous areas vulnerable to the supply and potential export of nutrients of concern for coastal algal blooms. Course-scale maps are regionally based and used to indicate nutrient hazardous areas where more detailed mapping is needed. Detailed hazard maps are more locally based and produced at a scale suitable for inclusion into local government planning instruments. Areas may have any of the following features:

- soil or vegetation types that are naturally conducive to high concentrations of nitrogen, phosphorus, iron and/or organic matter (for example, wetlands, marine and alluvial sediments) or where management activities or land use contribute to intensification or mobilisation of these nutrients of concern (for example, disturbance of acid sulfate soils)
- site conditions (for example, water logging and anaerobic conditions, perched groundwater tables) that promote formation of nutrients into bioavailable form
- location in close proximity to waterways or with site conditions that readily promote transport of nutrients to waterways or groundwater (for example, highly transmissive, permeable soils such as Podzols).

Where local government areas have not been mapped for the above features the information requirements for development assessment should investigate the development site for the risk of mobilisation of nutrients of concern. See Implementing Policies and Plans for Managing Nutrients of Concern for Coastal Algal Blooms in Queensland for further details (see <www.derm.qld.gov.au>).

Regional Plans—statutory instruments that provide an integrated planning policy for a designated region and are made by the regional planning Minister under the *Sustainable Planning Act 2009*. Regional plans may be supported by State Planning Regulatory Provisions with which compliance is mandatory (the current South East Queensland Regional Plan 2009-2031 and Far North Queensland Regional Plan 2009-2031 are so supported).

Sediment—solids (typically sand, silt, clay, mud, and other particulate matter) that are transported by water. Sediment is considered to be a ‘contaminant’ as defined in schedule 9 of the Environmental Protection Regulation 2008 (made under the *Environmental Protection Act 1994*).

State development area as defined under the *State Development and Public Works Organisation Act 1971* means a part of the State or of an area over which the State claims jurisdiction, delineated on a plan, and declared under the Act to be a State development area.

Stormwater—rainfall which runs off roofs, roads and other surfaces and flows into gutters, streams and waterways where it eventually flows into the bays and ocean.

Note: This water can carry all sorts of contaminants. Some are obvious such as plastic bags or detergents from people washing their cars. Others are not so obvious such as nutrients, dissolved metals and surface water run-off following a rain event (including piped flows).

Stormwater quality management plan (SQMP)—a plan for a local area that assists local councils and other catchment managers to recognise the impacts of activities, to develop management strategies, and to integrate stormwater management systems in rural and urban areas.

Note: A site SQMP may only apply to a specific development site. An urban stormwater quality management plan (USQM) for a local area may be a component of the SQMP (see urban stormwater quality management plan).

Suitably qualified person—a suitably qualified person is one (or more) of the following (relevant to implementing the applicable development assessment code requirements at Appendix 1):

- for urban stormwater quality and flow management—a person with relevant tertiary qualifications or equivalent, including a registered practising engineer of Queensland (RPEQ) (civil engineering, environmental engineering). Such persons may be responsible for a site stormwater quality management plan (site SQMP).
- for erosion and sediment control—a person who is a certified practising soil scientist (CPSS) or certified practitioner erosion and sediment control (CPESC), or an RPEQ (or equivalent) with experience and training in soil science and erosion and sediment control. Such persons may be responsible for erosion and sediment control plans (ESCP).
- for wastewater management—a person with appropriate tertiary qualifications or equivalent such as an RPEQ with experience in environmental engineering or environmental scientist (or similar) incorporating waste water management. Such persons may be responsible for a site waste water management plan for the design, operation or construction of a development.
- for management of non-tidal artificial waterways—a person with tertiary qualifications or equivalent such as an RPEQ (environmental engineering) or environmental scientist (or similar) and experience in incorporating waterway management. Such persons may be responsible for a waterway management plan for the design, operation or construction of a development with artificial waterways.
- for coastal algal blooms—a person with tertiary qualifications (that is, science) or equivalent and experience in planning and managing for soil nutrients, water quality, hydrology and acid sulfate soils (for example, certified practising soil scientist or certified environmental practitioner)
- for acid sulfate soils—a person with tertiary qualifications (that is, science) or equivalent and experience in planning and managing for soils and acid sulfate soils (for example, certified practising soil scientist).

Urban purposes—as defined under the Sustainable Planning Regulation 2009 means purposes for which land is used in cities or towns, including residential, industrial, sporting, recreation and commercial purposes, but not including environmental, conservation, rural, natural or wilderness area purposes.

Urban stormwater quality management plan (USQMP)—a plan made as the urban stormwater component of a total water cycle management plan (TWCMP) for a local area and in accordance with the department's TWCMP Guideline and Urban Stormwater Quality Planning Guideline. An USQMP is a requirement under section 21 of the EP water policy as part of a TWCMP.

Note: In other cases, an USQMP developed only for a particular site, may be a component of the Stormwater Quality Management plan (see definition above).

Waste management hierarchy—the listing of types of waste management practices in the preferred order of adoption:

- avoid
- re-use
- recycle
- energy recovery
- treat and dispose.

The waste management hierarchy is a framework for prioritising waste management practices to achieve the best environmental outcome and applies to the maximum extent possible, or unless otherwise varied

in the water management regulation. Schedule 1 of the Environmental Protection (Waste Management) Policy 2000 further details the types for practices in the waste management hierarchy.

Waste water—an aqueous waste, including contaminated stormwater (as per Schedule 2 of the EP water policy).

Waste water management plan (WWMP)—a plan typically submitted with a development assessment application detailing the waste water management system and design for a proposed development (sometimes known as ‘site based management plan’). They sometimes also contain an erosion and sediment control plan for the construction phase of the development. They are also a way of detailing any offset arrangements that may be employed.

Waters—means estuarine, coastal and marine waters to the limit of Queensland waters as defined under the *Acts Interpretation Act 1954*. Waters includes the bed and banks of waters (see section 21 of the *Water Act 2000* for non-tidal water; see section 9 of the *Land Act 1994* for tidal water).

Note: Waters may include the whole or any part of surface water or groundwater, such as river, stream, lagoon, swamp, wetland, unconfined surface water or natural or artificial watercourse, lake or dam.

Water quality objectives (WQOs)—the numerical concentration limits, mass or volume limits per unit of time or narrative statements of indicators established for waters to enhance or protect the environmental values for those waters. WQOs may be long term goals for water quality management, depending on the existing condition. WQOs are defined in Schedule 1 of the EP water policy 2009 for some catchments and the Queensland Water Quality Guideline 2009 defines WQOs for those areas not in Schedule 1 of the EP water policy 2009.

Waterway—as defined under the *Environmental Protection Act 1994* means any of the following:

- a creek, river, stream or watercourse
- an inlet of the sea into which a creek, river, stream or watercourse flows
- a dam or weir.