

Development Guidelines

Water Quality Management in Drinking Water Catchments



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1 Introduction

Water sustains life and supports the growth of the region's economy. Protecting drinking water catchments from the impacts of development is essential for the delivery of a safe, reliable and affordable water supply.

As one of Australia's largest water businesses, the Queensland Bulk Water Supply Authority (trading as Seqwater), has one of the most geographically spread and diverse asset bases of any capital city water authority. Our business is responsible for ensuring a safe, secure and cost-effective water supply to customers across South East Queensland (SEQ).

With increasing development, one particular challenge is the growing impact of waterway pollution (including stormwater, wastewater and agricultural run-off) on the water quality of drinking water supplies. The impacts of development can result in increased pathogens, sediment and nutrients entering waterways, which may result in the interruption and/or loss of water supply, require higher levels of treatment, cause nuisance and/or harm to public health, and impact environmental values. A related challenge is the need to minimise the cost to treat water to ensure a consistent, high quality water supply at a cost-effective price to consumers.

The Seqwater Development Guidelines provide an assessment framework to manage the risk of development activities in the drinking water catchments in SEQ¹. The geographical area this guideline applies to is shown in Figure 1.



2 About Seqwater

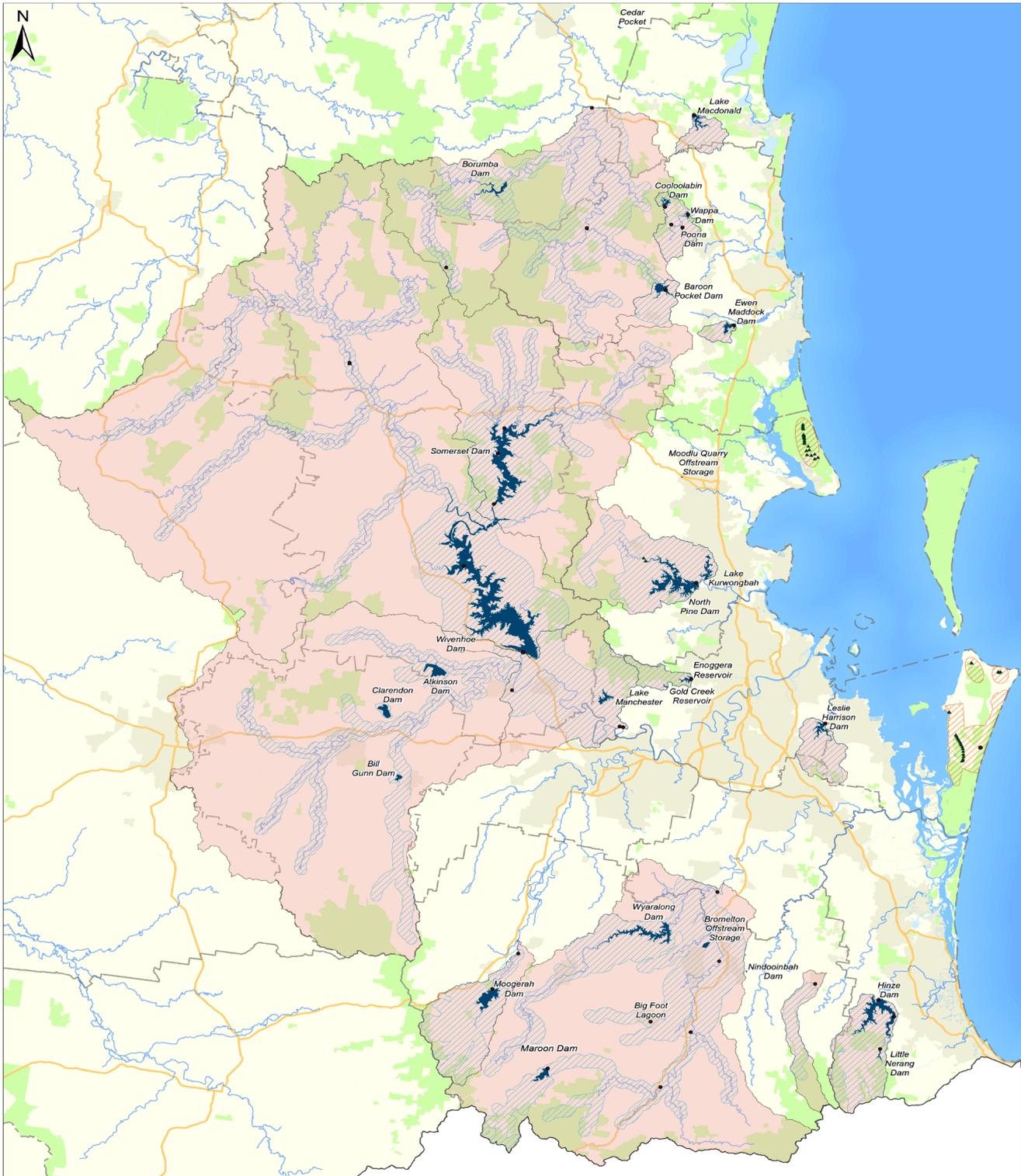


Seqwater delivers a water supply to more than three million people in SEQ, as well as providing flood mitigation services and catchment management. Seqwater also provides water for irrigation to about 1,200 customers and offers community recreation facilities enjoyed by more than 2.6 million people each year.

Seqwater's operations extend from the New South Wales border to the base of the Toowoomba ranges and north to Gympie. More than \$11 billion of water supply assets - including the SEQ Water Grid - and the natural catchments of the region's major water supply sources are managed by Seqwater. This includes dams, weirs, conventional water treatment plants and climate resilient sources of water through the Gold Coast Desalination Plant and the Western Corridor Recycled Water Scheme. More than 600 kilometres of reverse flow pipeline network enables drinking water to be transported throughout SEQ.

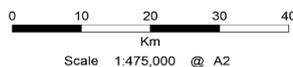
Seqwater was formed on 1 January 2013 through a merger of three State-owned water businesses, the SEQ Water Grid Manager, LinkWater and the former SEQwater. Seqwater is also responsible for the long term planning of the region's future water needs, a function that was formerly undertaken by the Queensland Water Commission.

Figure 1: Drinking water supply catchments in South East Queensland



- Legend**
- Water Storage
 - Water Supply Buffer Area
 - Water Resource Catchment
 - Aquifer Recharge Area
 - Drinking Water Offtake
 - Groundwater Bore

Drinking Water Supply Catchments in South East Queensland



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Date: 10/04/2018

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3 Planning Framework



Recreation on Enoggera Dam

The Queensland planning framework includes a number of legislative requirements directed at ensuring the protection of water quality.

The *Planning Act 2016* (PA) is the principal legislation for Queensland's planning and development system and provides for the making of state and local planning instruments that guide strategic planning and development across the State. The Act enables State and local government to regulate development to ensure the protection of water quality.

Within the legislative planning framework, the *State Planning Policy 2017* (SPP) and *ShapingSEQ: South East Queensland Regional Plan 2017* are key planning instruments which include protections for drinking water quality.

3.1 State Planning Policy

The SPP articulates the State's interests in land use planning and development. These 'state interests' must be appropriately integrated into local planning instruments, including planning schemes. Policy 6 of the State Interest for Water Quality relates to protection of drinking water supply:

Development in Water Resource Catchments and Water Supply Buffer Areas avoids potential adverse impacts on surface waters and ground waters to protect drinking water supply environmental values.

The SPP contains mapping of the Water Resource Catchments and Water Supply Buffer Areas available at <https://planning.dilgp.qld.gov.au/maps>. The SPP is available at planning.dilgp.qld.gov.au/planning/better-planning/state-planning.

3.2 ShapingSEQ: South East Queensland Regional Plan 2017

ShapingSEQ provides a framework to manage growth, land use change and development in SEQ. It sets out five key themes to support its 50-year vision.

The themes identify goals, elements and strategies which are defined locally in sub-regional directions. Strategies and sub regional directions are to be reflected in local government planning schemes. In relation to drinking water quality, *ShapingSEQ* defines drinking water catchments in Map 5d and Table 11b. The following strategy promotes the protection of these areas:

Protect the region's drinking water catchments and aquifer recharge areas from inappropriate development to avoid compromising the delivery of a safe, secure and cost-effective drinking water supply (Map 5d and Table 11b).

Note: The SPP and *ShapingSEQ* mapping is reflected in Figure 1 of this document.

4 Water Resource Catchment Overlay Code

4.1 Application

This Code applies to assessing a material change of use, reconfiguring a lot or operational work applications for development in SEQ:

1. within a Water Resource Catchment, Water Supply Buffer Area or Aquifer Recharge Area; and
2. identified as requiring assessment in accordance with Section 4.3 Categories of Development.

4.2 Purpose

The purpose of the Code is to ensure that development and activities in a Water Resource Catchment, Water Supply Buffer Area or Aquifer Recharge Area are appropriately sited, designed and managed to maintain or improve water quality, flow regimes, environmental values and the physical integrity of natural processes to protect drinking water supply.

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

- The quality of surface water and groundwater entering water supply sources is maintained or improved.
- The quantity of surface water from development does not increase peak discharges or run-off volumes.
- Development does not compromise the drinking water supply environmental values identified in the *Environmental Protection Policy (Water) 2009*.
- The physical integrity of waterways, wetlands, lakes, springs, riparian areas and natural ecosystems that contribute to maintaining healthy functioning catchments is protected.

4.3 Categories of Development

Table 1: Categories of development in Water Resource Catchment Areas (where not in Water Supply Buffer Areas or Aquifer Recharge Areas)

Development	Categories of development
Any material change of use (excluding those listed below)	For a dwelling house: Accepted, where satisfying the assessment criteria AC1 in Table 3. Otherwise, Assessable.
Operational work	For any other development: Accepted, where satisfying the assessment criteria in Table 3. Otherwise, Assessable.
Reconfiguring a lot where connected to reticulated sewer	Accepted, where satisfying the assessment criteria AC2 to AC6 in Table 3. Otherwise, Assessable.
Industry (medium, high, special, marine)	Assessable
Intensive animal industry	
Extractive industry	
Utility installation that involves sewerage services, drainage or stormwater services, or waste-management facilities	
Motor sport facility	
For any other uses not listed above	

Table 2: Categories of development in Water Supply Buffer Areas or Aquifer Recharge Areas

Development	Categories of development
Any material change of use (excluding those listed below)	Accepted, where satisfying the assessment criteria AC1.1 or AC1.2 and AC2 to 6 in Table 3. Otherwise Assessable.
Operational work	
Reconfiguring a lot	
Industry (medium, high, special, marine)	Assessable
Intensive animal industry	
Extractive industry	
Utility installation that involves sewerage services, drainage or stormwater services, or waste-management facilities	
Motor sport facility	

4.4 Assessment Benchmarks for Accepted Development

Table 3: Assessment benchmarks for accepted development for material change of use, reconfiguring a lot or operational work

Wastewater	
Assessment criteria (AC) 1	<p>AC1.1 Development does not generate wastewater.</p> <p>OR</p> <p>AC1.2 The development is connected to reticulated sewer.</p> <p>OR</p> <p>AC1.3 The development involves a sewage treatment system (10 EP or less) and disposal area which complies with the following criteria:</p> <ol style="list-style-type: none"> 50m setback to a stream order 1-3; 100m setback to a stream order 4 or greater; 400m setback to the full supply level of a dam, lake or reservoir or watercourse that serves as a potable water supply; is not located on land with slope greater than 10%; and is not located on land below the 1% Annual Exceedance Probability (AEP) flood event.
Vegetation management	
AC2	<p>AC2.1 Vegetation clearing complies with the following criteria:</p> <ol style="list-style-type: none"> 25m to a stream order 1–3; 50m to a stream order 4 or greater; 200m to a full supply level of a dam, lake or reservoir or watercourse that serves as a potable water supply; is not undertaken at or below the 1% Annual Exceedance Probability (AEP) flood event; and is not undertaken on a slope greater than 15%.

Stormwater quality and hydrology

AC3

AC3.1

Development does not involve:

- a. an impervious area greater than 1,000 m²;
- b. the establishment of artificial waterways; and
- c. does not involve extraction of groundwater for a commercial purpose.

AND

AC3.2

Development fences all livestock from waterbodies (except private dams) where a site is being used for animal husbandry and animal keeping activities.

Excavation and filling

AC4

AC4.1

Earthworks comply with the following locational criteria:

- a. 25m setback to a stream order 1–3;
- b. 50m setback to a stream order 4 or greater;
- c. 200m setback to a full supply level of a dam, lake or reservoir or watercourse that serves as a potable water supply;
- d. is not undertaken at or below the 1% AEP flood event; and
- e. is not undertaken on a slope greater than 15%.

Storage and handling of dangerous goods, hazardous substances or environmentally hazardous materials

AC5

AC5.1

The storage or handling of dangerous goods, hazardous substances or environmentally hazardous materials involves an aggregate quantity less than 200L or 200kg.

OR

AC5.2

The storage or handling of dangerous goods, hazardous substances or environmentally hazardous materials with an aggregate quantity greater than 200L or 200kg and no more than 1000L or 1000kg and maintains the following separation distances:

- a. 50m to a stream order 1–3;
- b. 100m to a stream order 4 or greater; and
- c. 800m to a full supply level of a dam, lake or reservoir or watercourse that serves as a potable water supply.

AC6

AC6.1

Dangerous goods, hazardous substances or environmentally hazardous materials are located and stored in the following manner:

- a. at or above the 1% AEP flood event;
- b. undercover in a building or similar structure;
- c. in or on a dedicated impervious secondary containment store or device that permits full recovery of spills;
- d. in a manner that prevents the movement of packages/containers from their place of storage during a flood event; and
- e. in accordance with *Australian Standard AS 1940:2004 The Storage and Handling of Flammable and Combustible Liquids*.

4.5 Assessment Benchmarks for Assessable Development

Table 4: Assessment benchmarks for assessable development

Performance outcomes	Acceptable outcomes
Separation distances	
<p>P01</p> <p>Development maintains an adequate separation distance and avoids areas of potential flood inundation to protect waterways or water supply sources.</p>	<p>A01.1</p> <p>Development complies with the separation distances and other locational criteria specified in Table 5.</p> <p>Note: Where another setback distance or locational criteria is identified within this code, the higher standard applies.</p>
Wastewater (other than domestic wastewater)	
<p>P02</p> <p>Development does not discharge wastewater unless demonstrated to not compromise the drinking water supply environmental values.</p> <p>Note: Drinking water supply environmental values are referenced within Schedule 1 of the <i>Environmental Protection Policy (Water) 2009</i>.</p>	<p>A02.1</p> <p>Development does not generate wastewater.</p> <p>OR</p> <p>A02.2</p> <p>If development generates wastewater, the wastewater is collected and contained on-site, and is:</p> <ol style="list-style-type: none"> lawfully disposed to sewer; transferred off-site for treatment/disposal to an appropriately licensed facility; reused on-site in a closed-cycle irrigation scheme, industrial processes, washing/cleaning or other purpose; or treated to meet the drinking water supply environmental values prior to release. <p>Note: Where development involves the release of wastewater, a Wastewater Management Plan (WWMP) is to be prepared by a suitably qualified person. Plans are to provide an assessment of all risks and associated mitigation strategies for preventing adverse impact on the quality of drinking water and may require a water quality monitoring program.</p>



An example of bank erosion on the Logan River

Performance outcomes	Acceptable outcomes
<p>P03</p> <p>Where treated wastewater is irrigated to land, it will:</p> <ul style="list-style-type: none"> a. be confined to a dedicated area of land on-site; b. be suitably located and sized; and c. use irrigation practices that will not harm groundwater and on-site surface water quality. <p>Note: Developments involving the irrigation of wastewater will need to provide a MEDLI Modelling Report demonstrating the nominated land area for wastewater irrigation is suitably located and sized to accommodate design wastewater loads, storages are suitably sized to accommodate design wastewater loads, and proposed irrigation practices will not damage water quality. It is recommended the modelling exercise incorporate scenarios based on both a 10-year and 20-year planning horizon.</p>	<p>No acceptable outcome is nominated.</p>
Solid waste	
<p>P04</p> <p>Solid wastes generated by the development must be managed, stored and disposed in a manner that does not adversely impact on the quality of any surface water or groundwater.</p>	<p>The following acceptable outcomes are applicable to intensive animal industry only. For all other development, no acceptable outcome is nominated.</p> <p>A04.1</p> <p>The stockpiling of waste litter, manure and other organics is undertaken as follows:</p> <ul style="list-style-type: none"> a. on surfaces constructed with permanent impervious underlay to prevent leaching (groundsheets will only be accepted where stockpiling is temporary); b. located outside of an effluent irrigation area; c. located 3m above the seasonal high-water table and away from recharge areas; d. sized to accommodate the proposed disposal timeframes; e. designed with run-off diversion drainage upstream to prevent uncontaminated stormwater movement into the area; f. bunded to capture contaminated run-off for appropriate treatment and disposal; and g. covered, desirably within a shed but otherwise with weatherproof material. <p>AND</p> <p>A04.2</p> <p>The reuse of waste litter, manure and other organics as soil conditioners or fertilizers is not undertaken on-site.</p> <p>AND</p> <p>A04.3</p> <p>Composting activities are not undertaken on-site.</p> <p>AND</p> <p>A04.4</p> <p>Carcasses are not buried on-site except as required in accordance with any emergency animal disease directive by a biosecurity agency.</p>

Performance outcomes	Acceptable outcomes
Wastewater	
<p>P05</p> <p>Wastewater treatment systems are designed, constructed and managed in ways that do not compromise the drinking water supply environmental values.</p> <p>Note: water supply environmental values are referenced within Schedule 1 of the Environmental Protection Policy (Water) 2009.</p>	<p>A05.1</p> <p>Development does not involve an on-site wastewater facility.</p> <p>OR</p> <p>A05.2</p> <p>Where the combined total peak design capacity of wastewater treatment is less than 21 Equivalent Persons (EP), the design of the system achieves a Low or Medium Risk classification in accordance with Seqwater’s <i>Land Use Risk Tool for on-site sewage facilities</i>.</p> <p>OR</p> <p>A05.3</p> <p>Where the combined total peak design capacity of wastewater treatment is 21EP or greater, the system is located and designed in the following manner:</p> <ol style="list-style-type: none"> a. achieves a minimum secondary treatment standard with nutrient removal and disinfection; b. on land at or above the 0.5% AEP flood event; c. the hydraulic capacity of the system is five times the average dry weather flow (ADWF); d. no direct discharge of sewage to a waterway or water supply source occurs, unless during a bypass event that exceeds peak hydraulic capacity and sewage is screened and disinfected before release; e. where treated effluent will be used in irrigation, application is: <ol style="list-style-type: none"> i. confined to a dedicated area of land suitably located and sized, and using irrigation practices that will not adversely affect groundwater and surface water quality; and ii. located on land at or above the 0.5% AEP flood event; and f. where the combined total peak design capacity of wastewater treatment is 1500EP or greater, and direct discharge to a waterway is the only reasonably practical disposal option, the contribution of flow from the system must be modelled over the range of reasonably expected flow events. If the proportion of flow is: <ol style="list-style-type: none"> i. <10% of the total flow, 3-log reduction bacteria and virus, and 4-log reduction protozoa, minimum pathogen log-reduction values apply; or ii. >10% of the total flow, it must demonstrate compliance with the Australian guidelines for water recycling (Phase 2): Augmentation of drinking water supply (to be undertaken in consultation with Seqwater). <p>Note: Developments involving the irrigation of wastewater will need to provide a MEDLI Modelling Report demonstrating the nominated land area for irrigation is suitably located and sized to accommodate design wastewater loads, storages are suitably sized to accommodate design wastewater loads and proposed irrigation practices will not result in any adverse impact on water quality. It is recommended the modelling exercise incorporate scenarios based on both a 10-year and 20-year planning horizon and incorporate a minimum of three irrigation concepts.</p>

Performance outcomes	Acceptable outcomes
Vegetation management	
<p>P06</p> <p>Maintain the current extent of any vegetation located adjacent, or connected, to any waterway or water supply source.</p>	<p>A06.1</p> <p>Clearing complies with the following locational criteria:</p> <ol style="list-style-type: none"> 25m setback to a stream order 1–3; 50m setback to a stream order 4 or greater; 200m setback to a full supply level of a dam, lake or reservoir or watercourse that serves as a potable water supply; is not undertaken on land within the 1% AEP flood event; and is not undertaken on a slope greater than 15%.
Stormwater quality and hydrology	
<p>P07</p> <p>Manage stormwater at the construction phase to protect drinking water supply environmental values and facilitate the achievement of water quality objectives for receiving waters.</p> <p>Note: Drinking water supply environmental values are referenced within Schedule 1 of the <i>Environmental Protection Policy (Water) 2009</i>.</p>	<p>A07.1</p> <p>At the construction stage, an erosion and sediment control program (ESCP) demonstrates that stormwater achieves the design objectives listed in Table A of the SPP (appendix 2): <i>Construction Phase – Stormwater management design objectives</i> (all parts).</p> <p>OR</p> <p>A07.2</p> <p>An ESCP demonstrates how stormwater quality will be managed at the construction stage in accordance with an acceptable regional or local guideline so that target contaminants are treated to a design objective at least equivalent to Table A of the SPP (all parts).</p> <p>OR</p> <p>A07.3</p> <p>Stormwater run-off generated during construction is captured and transferred off-site or captured and treated to any applicable re-use standards and reused on-site.</p>



Wivenhoe Dam flood gates

Performance outcomes	Acceptable outcomes
<p>P08</p> <p>Manage stormwater during operational (post-construction) stages to protect drinking water supply environmental values and facilitate the achievement of water quality objectives for receiving waters.</p> <p>Note: Drinking water supply environmental values are referenced within Schedule 1 of the <i>Environmental Protection Policy (Water) 2009</i>.</p>	<p>A08.1</p> <p>Development does not involve an impervious area greater than 1,000m².</p> <p>OR</p> <p>A08.2</p> <p>Development is for reconfiguring a lot that;</p> <ol style="list-style-type: none"> will not create more than two additional lots; or involves a land area less than 1000m². <p>OR</p> <p>A08.3</p> <p>Stormwater run-off generated during operation (post-construction) demonstrates a minimum reduction in mean annual load from unmitigated development that achieves the following stormwater management design objectives:</p> <ul style="list-style-type: none"> 85% reduction in total suspended solids; 65% reduction in total phosphorus; 45% reduction in total nitrogen; and 95% reduction in gross pollutants. <p>OR</p> <p>A08.4</p> <p>Stormwater run-off generated during operation is captured and transferred off-site or captured and treated to any applicable re-use standards and reused on-site.</p> <p>Note: A Site Stormwater Quality Management Plan is to be prepared by a suitably qualified individual such as a Civil Engineer or an Environmental Professional and is to be certified by a Registered Professional Engineer (RPEQ) (Civil or Environmental) to demonstrate compliance with the stormwater design objectives.</p>
<p>P09</p> <p>Development maintains or improves the quality of surface water by adopting measures that exclude livestock from entering a water body where a site is being used for animal husbandry or animal-keeping activities.</p>	<p>No acceptable outcome is nominated.</p>



Cattle crossing a waterway

Performance outcomes	Acceptable outcomes
<p>P010</p> <p>Development avoids and minimises changes to the existing surface water natural hydrological regime so that:</p> <ul style="list-style-type: none"> a. there is no change to the reference high-flow and low-flow duration frequency curves, low-flow spells frequency curve and mean annual flow to and from waterways as a result of the development; b. any relevant flows into waterways comply with the relevant flow objectives of the applicable water plan for the area; and c. the collection and re-use of stormwater occurs so there is no increase to the velocity or volume of stormwater flows entering a waterway. 	<p>No acceptable outcome is nominated.</p>
<p>P011</p> <p>The design and location of artificial waterways:</p> <ul style="list-style-type: none"> a. use natural channel design principles to minimise erosion, flooding and maintenance while maximising ecological and aesthetic values of waterways; b. are compatible with any existing natural waterways; and c. are designed to ensure surface water hydrological regimes are maintained. 	<p>No acceptable outcome is nominated.</p> <p>Note: The Ipswich City Council Waterway and Channel Rehabilitation Guidelines or Brisbane City Council Natural Channel Design Guidelines demonstrate suitable natural channel design works.</p>
<p>P012</p> <p>Development maintains the existing groundwater hydrological regime.</p>	<p>A012.1</p> <p>Development does not change the existing groundwater hydrological regime by lowering or raising the water table and hydrostatic pressure outside the bounds of variability of existing predevelopment conditions.</p> <p>AND</p> <p>A012.2</p> <p>Development does not result in the ingress of saline water into freshwater aquifers.</p> <p>Note: Where development is likely to impact on the water table, a hydrological assessment undertaken by a suitably qualified professional may be required to demonstrate no adverse impact on the groundwater hydrological regime.</p>

Performance outcomes	Acceptable outcomes
Excavation and filling	
<p>P013</p> <p>The siting and design of earthworks minimises impacts on the natural landform that may cause contamination or interfere with the flow of a waterway or water supply source.</p>	<p>A013.1</p> <p>Earthworks comply with the following locational criteria:</p> <ul style="list-style-type: none"> a. 25m setback to a stream order 1–3; b. 50m setback to a stream order 4 or greater; c. 200m setback to a full supply level of a dam, lake or reservoir or watercourse which serves as a potable water supply; d. is not undertaken on land at or below the 1% AEP; and e. is not undertaken on a slope greater than 15%.
<p>P014</p> <p>Any earthworks minimise erosion and the movement of sediment off-site.</p> <p>Note: A Sediment and Erosion Control Plan is to be prepared by a suitably qualified and experienced professional in accordance with best practice such as IECA 2008, Best Practice Erosion and Sediment Control.</p>	<p>No acceptable outcome is nominated.</p>
Dangerous goods, hazardous substances or environmentally hazardous materials	



Sediment plume in North Pine catchment

Performance outcomes	Acceptable outcomes
<p>P015</p> <p>Dangerous goods, hazardous substances or environmentally hazardous materials are stored and handled in a manner that minimises the potential for contamination of surface and groundwater in the event of a leak or spill.</p>	<p>A015.1</p> <p>The storage or handling of dangerous goods, hazardous substances or environmentally hazardous materials involves an aggregate quantity less than 200L or 200kg.</p> <p>OR</p> <p>A015.2</p> <p>The storage or handling of dangerous goods, hazardous substances or environmentally hazardous materials with an aggregate quantity greater than 200L or 200kg and less than 1000L or 1000kg maintains the following separation distances:</p> <ol style="list-style-type: none"> a. 100m to a minor waterway; b. 100m to a stream order 4 or greater; and c. 800m to a full supply level of a dam, lake or reservoir or watercourse that serves as a potable water supply. <p>AND</p> <p>A015.3</p> <p>Dangerous goods, hazardous substances or environmentally hazardous materials are located and stored in the following manner:</p> <ol style="list-style-type: none"> a. is not undertaken on land within the 1% AEP flood event; b. undercover in a building or similar structure; c. in or on a dedicated impervious secondary containment store or device that permits full recovery of spills; d. in a manner that prevents the movement of packages/containers from their place of storage during a flood event; and e. in accordance with <i>Australian Standard AS 1940-2004: The Storage and Handling of Flammable and Combustible Liquids</i>. <p>OR</p> <p>A015.4</p> <p>The storage of dangerous goods, hazardous substances or environmentally hazardous materials (other than petroleum products) in aggregate quantities greater than 1000L or 1000kg is not undertaken unless a site-specific risk assessment presents minimal risk to drinking water quality.</p> <p>For petroleum products only:</p> <p>A015.5</p> <p>The storage of petroleum products in bulk (greater than 1000L) aboveground uses self-bunded vessels that meet <i>Australian Standard AS 1692 Steel Tanks for Flammable and Combustible Liquids</i>.</p> <p>OR</p> <p>A015.6</p> <p>The storage of petroleum products in bulk (greater than 1000L) aboveground uses single-skin vessels installed within a bunded compound that:</p> <ol style="list-style-type: none"> a. is sufficiently impervious (permeability should be <math><10^{-9}</math> m/s) to retain and recover spillage; and b. has a net capacity of at least 100% of the bunded vessel or aggregate quantity of vessels where operated as a single unit. <p>OR</p> <p>A015.7</p> <p>Petroleum products belowground (greater than 200L) are stored in vessels that are non-corrodible, double walled with an interstitial space between, and meet the requirements of Australian Standard AS 1692: <i>Steel Tanks for Flammable and Combustible Liquids</i> and/or UL 1316 <i>Glass fibre reinforced plastic underground storage tanks for petroleum products, alcohols and alcohol gasoline mixture</i>.</p>

Performance outcomes	Acceptable outcomes
Material change of use for extractive industry only	
<p>P016 Extraction activities do not impact on erosion, natural fluvial processes, river bank stability or the storage capacity volume of a floodplain.</p>	<p>No acceptable outcome is nominated.</p>
For reconfiguring a lot only	
<p>P017 When reconfiguring a lot, all resultant lots requiring an on-site wastewater treatment system do not compromise the environmental values of drinking water supply.</p> <p>Note: Drinking water supply environmental values are referenced within Schedule 1 of the <i>Environmental Protection Policy (Water) 2009</i>.</p>	<p>A017.1 Any new lot can accommodate an area for on-site wastewater treatment and disposal complying with the following:</p> <ol style="list-style-type: none"> 50m setback to a stream order 1–3; 100m setback to a stream order 4 or greater; and 400m setback to a full supply level of a dam, lake or reservoir or watercourse that serves as a potable water supply. <p>AND</p> <p>A017.2 Any new lot can accommodate an area for on-site wastewater treatment and disposal on land that is not within the 1% AEP flood event and on a slope at or less than 10%.</p> <p>AND</p> <p>A017.3 Any proposed lots that are to accommodate a future on-site wastewater system, maintain an average lot size of at least 2.5 ha.</p> <p>Note: A wastewater site analysis is to be prepared by a suitably qualified professional demonstrating the above.</p>



Development in the Mid-Brisbane catchment

Table 5: Separation distance and other locational criteria

Development type and activities	Stream Order 1 To 3	Stream Order 4 or greater	Full supply level of a dam, lake or reservoir or watercourse that serves as a potable water supply	Flood immunity
Intensive animal industry	50m	100m	800m	AEP 1%
Aquaculture	Case-by-case basis	Case-by-case basis	Case-by-case basis	N/A
All other agricultural or forestry land uses	50m	100m	400m	Buildings – AEP 1% Other areas – AEP 20%
Extractive industry	50m	100m	400m	AEP 1%
All other industry uses	100m	100m	800m	
Motor sport facility	50m	100m	400m	Buildings – AEP 1% Other infrastructure (e.g. trails) – AEP 20%
Outdoor sport and recreation				
Major sport, recreation and entertainment facility				
Service station	50m	100m	800m	AEP 1%
All other development types	50m	100m	400m	AEP 1%



Algal bloom in Baroon Dam catchment