Seqwater Development Guidelines

Water Quality Management in Drinking Water Catchments

OCTOBER 2024 | **GDE-00001 V2**

seqwater
WATER FOR LIFE

Contents

Queensland Bulk Water Supply Authority, trading as Seqwater.

ABN: 75 450 239 876

Level 8, 117 Brisbane Street, Ipswich QLD 4305

PO Box 328, Ipswich Qld 4305

P +61 7 3035 5500 **F** +61 7 3229 7926

E planning@seqwater.com.au **W** seqwater.com.au

Seqwater acknowledges the Traditional Owners of these waters and surrounding lands and recognises their continued connection to the land, waters and community. We pay our respects to them and their cultures and to elders both past and present.

1.0 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.

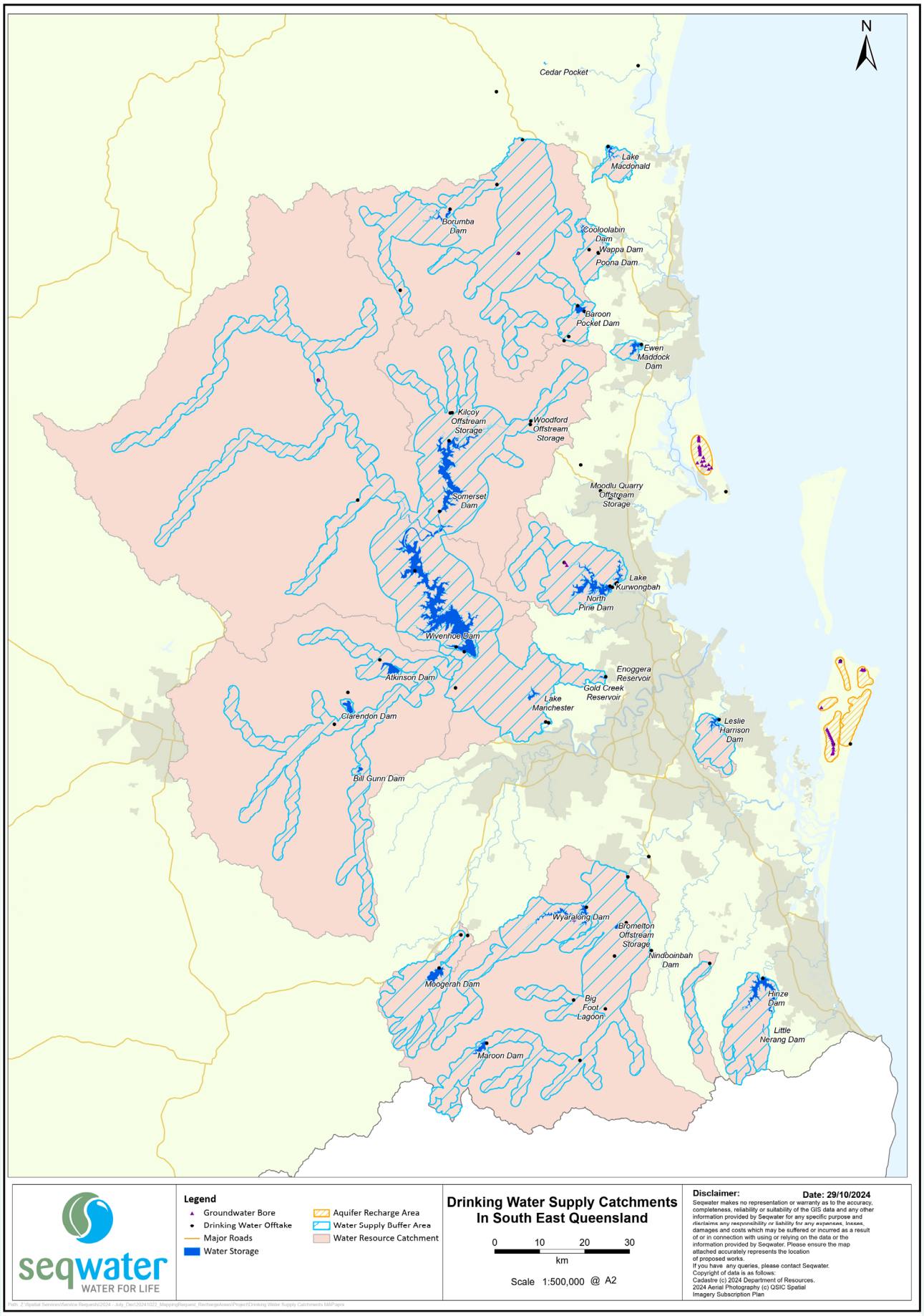
As one of Australia's largest water businesses, the Queensland Bulk Water Supply Authority (trading as Seqwater), has one of the most geographically spread and diverse asset bases of any capital city water authority. Our business is responsible for ensuring a safe, secure and cost-effective water supply 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 for State or Local Government planning schemes to regulate development activities to maintain or improve water quality in drinking water catchments in SEQ[1].The geographical area this guideline applies to is shown in **Figure 1.**

[1] The State Planning Policy 2017 and ShapingSEQ: SEQ Regional Plan 2023, include policy matters relevant to drinking water quality.

Figure 1: Drinking water supply catchments in South East Queensland



2.0 About Seqwater

Water gives and sustains life, and helps to create prosperity. It's a vital service that Seqwater delivers to more than 3.6 million people in South East Queensland. Seqwater is one of Australia's largest water businesses with the most geographically spread and diverse asset base of any capital city water authority. Our operations extend from the New South Wales border to the base of the Toowoomba ranges and north to Gympie.

Seqwater owns and manages up to $11 billion of water supply assets - including the SEQ Water Grid - and the natural catchments of the region's major water supply sources. 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. The SEQ Water Grid, a 600 kilometre reverse flow pipeline network, enables drinking water to be transported around the region, from the Sunshine Coast to Greater Brisbane, to Redlands and south to the Gold Coast.

Seqwater also manages recreation facilities at our dams, lakes and parks that offers community recreation facilities enjoyed by more than 2.7 million people each year, providing more than 50% of the green space in SEQ outside of national parks. Seqwater provides flood mitigation services and plays an active role in managing its catchments, as well as providing water for irrigation to 1,200 customers.

We live and work in the region, so we know how important it is to do our job with a focus on safety, quality, reliability and value-for-money – because we depend on it too. South East Queensland is our home and we are determined to shape and deliver the region's future prosperity.

3.0 Planning Framework

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 2023 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, outlining specific policies and assessment benchmarks, focussed on the protection and enhancement of the environmental values and quality of Queensland waters. Key components of the relevant policies in the SPP include requirements of development to:

- facilitate the protection or enhancement of environmental values and the achievement of water quality objectives for Queensland waters
- avoid or minimise the disturbance to high risk soils, high ecological value aquatic ecosystems, groundwater dependent ecosystems and natural drainage lines and landform features
- be located, designed, constructed and operated to avoid or minimise adverse impacts on environmental values of receiving waters arising from:
  - altered stormwater quality and hydrology
  - waste water (other than contaminated stormwater and sewage)
  - the creation or expansion of non-tidal artificial waterways, and
  - the release and mobilisation of nutrients and sediments.
- during construction and post-construction phases of a project, achieve applicable stormwater management design objectives, and
- where in water resource catchments and water supply buffer areas, avoid potential adverse impacts on surface waters and groundwaters to protect drinking water supply environmental values.

The SPP contains mapping of the water resource catchments and water supply buffer areas which is available through the State Planning Policy interactive mapping system (SPP IMS). The SPP itself is available on the State Government's QLD Planning Framework website.

3.2 SHAPINGSEQ 2023 (SOUTH EAST QUEENSLAND REGIONAL PLAN)

ShapingSEQ 2023 provides a framework to manage growth, land use change and development in SEQ. It sets out five key themes (Grow, Prosper, Connect, Sustain and Live) to support its 50-year vision.

The themes identify goals, regional priorities, outcomes and strategies, including sub-regional directions and outcomes. Outcomes, Strategies and sub-regional directions are to be reflected in local government planning schemes. In relation to drinking water quality, ShapingSEQ defines 'Water resource catchments' in Table 12 and Map 18, and also promotes the protection of these areas within Strategy 6.5 which states:

> *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.*

4.0 Water Resource Catchment Overlay Code

4.1 APPLICATION

The Water Resource Catchment Overlay Code (Code) is designed as a model code for inclusion in local government planning schemes and is applied by Seqwater in its assessment of any third party advice requests/referral agency requests.

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:

1. Development protects and improves the water quality of the bulk water supply to ensure a safe, secure and cost-effective drinking water supply.
2. Development maintains or improves the quality of surface water and groundwater entering water supply sources.
3. The quantity of surface water from development does not increase peak discharges or run-off volumes.
4. Development in drinking water source catchments does not result in adverse individual site or cumulative catchment impacts to bulk water supply, including on surface and ground water, from incompatible development.
5. Development involving wastewater management prevents contamination of drinking water catchments or groundwater infiltration areas.
6. Development implements catchment management and groundwater infiltration water protection measures to mitigate potential cumulative impacts.
7. Development minimises site disturbance and construction impacts on drinking water catchments and groundwater infiltration areas.
8. Development applies precautionary principles where there is uncertainty regarding impacts on drinking water catchments and groundwater infiltration areas.
9. Development does not compromise the drinking water supply environmental values identified in the *Environmental Protection (Water and Wetland Biodiversity) Policy 2019*.
10. 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: Table of assessment in water resource catchment areas (where not in water supply buffer areas or aquifer recharge areas)

Categories of development	Assessment process, assessment benchmarks or requirements for accepted development.
Material change of use	
Any material change of use excluding: • Dwelling house • Industry where medium, high, special or marine industry • Intensive animal husbandry • Extractive industry[2] • Utility installation that involves sewerage services, drainage or stormwater services, or waste management facilities • Motor sport facility	Accepted development subject to requirements, where satisfying the requirements in **Table 3.** Where not satisfying the requirements in **Table 3**, assessable development.
Any material change of use for a Dwelling house	Accepted development subject to requirements, where satisfying the assessment criteria **AC1** in **Table 3**. Where not satisfying assessment criteria **AC1** in **Table 3**, assessable development.
Intensive animal industry	Assessable development
Extractive Industry	Assessable development
Utility installation that involves sewerage services, drainage or stormwater services, or waste-management facilities	Assessable development
Motor sport facility	Assessable development
For any other uses not listed above	Assessable development
Operational work	
Operational work	Accepted, where satisfying the assessment criteria **AC2** to **AC8** in **Table 3.** Otherwise, assessable development.
Reconfiguration of a lot	
Reconfiguring a lot where not connected to reticulated sewer	Assessable development.

Note: Where nominated as 'assessable development' in the above table either code or impact assessment is required.

2. Extractive industry is defined under the *Planning Regulation 2017* and for clarity where referenced in this guideline, includes commercial extraction of groundwater and in-stream extractive activities.

Table 2: Table of assessment for development in water supply buffer areas or aquifer recharge areas

Categories of development	Assessment process, assessment benchmarks or requirements for accepted development.
Material change of use	
Any material change of use (excluding Intensive animal husbandry, extractive industry or motor sport facility)	Accepted development, where satisfying the assessment criteria **AC1.1** or **AC1.2**, and **AC2** to **AC8**. Otherwise, assessable development.
Industry (where medium impact, high impact, special or marine industry)	Assessable development
Intensive animal industry, Aquaculture and Intensive Horticulture	Assessable development
Extractive industry	Assessable development
Motor sport facility	Assessable development
Operational work	
Operational work	Assessable development
Reconfiguration of a lot	
Reconfiguration of a lot where not connected to reticulated sewer	Assessable development

Note: Where nominated as 'assessable development' in the above table either code or impact assessment is required.

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

Assessment criteria (AC)	
Wastewater	
AC1	**AC1.1** Development does not generate wastewater. Or **AC1.2** The development is connected to reticulated sewer and no wastewater (treated or untreated) is discharged to ground or waters. Or **AC1.3** A site and soil evaluation with wastewater design has been prepared by an appropriately QBCC licensed wastewater designer and the on-site wastewater treatment and disposal facilities (both current, if proposed to be utilised for a new use and / or proposed) achieve the following outcomes: a) Minimum Advanced Secondary treatment standard; b) 50m setback to a stream order 1-3; c) 100m setback to a stream order 4 or greater; d) 400m setback to the full supply level of a dam, lake, reservoir or watercourse that serves as a potable water supply; e) is not located on land with slope greater than 10% or on land below the 1% Annual Exceedance Probability (AEP) flood event, and f) utilises a sub-surface disposal method for treated effluent (e.g. trenches, beds, mounds or shallow sub-surface drip).
Vegetation management	
AC2	**AC2.1** Vegetation clearing does not occur within the following separation distances: a) 25m to a stream order 1–3; b) 50m to a stream order 4 or greater; and c) 200m to a full supply level of a dam, lake, reservoir or watercourse that serves as a potable water supply. And **AC2.2** Vegetation clearing is not undertaken at or below the 1% AEP flood event or on a slope greater than 15%. **Note:** In addition to the above Acceptable Outcomes, prior to any clearing, development must ensure compliance with relevant legislation including *Vegetation Management Act 1999, Nature Conservation Act 1992, Environmental Offset Act 2014, Planning Act 2016 and Planning Regulation 2017.*
Stormwater quality and hydrology	
AC3	**AC3.1** Development does not involve an aggregate impervious area greater than 1,000 m². And **AC3.2** Development does not involve the establishment of artificial waterways. And **AC3.3** Development does not involve extraction of groundwater for a commercial purpose. And **AC3.4** Development fences all livestock from watercourses and waterbodies (except private dams) where a site is being used for animal husbandry and animal keeping activities.

Assessment criteria (AC)	
Excavation and filling	
AC4	**AC4.1** Earthworks do not occur within the following separation distances: a) 25m to a stream order 1–3; b) 50m to a stream order 4 or greater; and c) 200m to a full supply level of a dam, lake or reservoir or watercourse that serves as a potable water supply. And **AC4.2** Earthworks are not undertaken at or below the 1% AEP flood event or 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) 100m to any watercourse; and b) 800m to a full supply level of a dam, lake or reservoir or watercourse that serves as a potable water supply.
Hazardous materials	
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 (including climate change factors); b) free of coastal hazards; c) roofed or covered to prevent the ingress of rainfall and run-off, and that roof water is piped away from an area of potential spills or contamination; d) paved with an impervious surface and bunded so any spills are retained on-site for removal; e) in a manner that prevents the movement of packages/containers from their place of storage during an event where flood or tidal waters impact the premises; and f) in accordance with Australian Standard AS 1940:2017 The Storage and Handling of Flammable and Combustible Liquids. **Note:** Refer to the relevant local government to determine the 1% AEP flood event. Where the local government does not have sufficient information seek this information from a Registered Professional Engineer of Queensland (RPEQ). **Note:** Refer to the relevant local government to determine the extent of coastal hazards that affect the premises. Where the local government does not have sufficient information OR has not appropriately incorporated the natural hazards (coastal hazards) state interest, refer to the State Planning Policy interactive mapping system.
AC7	**AC7.1** Development does not result in hazardous materials discharging to land or waters.
AC8	**AC8.1** Development does not involve the use of herbicides, pesticides or fertilisers within the Water Supply Buffer Area and/or Water Resource Catchment.

4.5 ASSESSMENT BENCHMARKS FOR ASSESSABLE DEVELOPMENT

Table 4: Assessment benchmarks for assessable development

Performance outcomes	Acceptable outcomes
Separation distances	
PO1 Development maintains adequate separation distances to watercourses and water bodies and avoids areas of flood inundation to protect drinking water source areas.	**AO1.1** Development complies with the separation distances and other locational criteria specified in **Table 5**.
Wastewater (other than sewage)	
PO2 Development does not discharge wastewater unless demonstrated to not compromise the drinking water supply environmental values. **Note:** Schedule 1 of the *Environmental Protection (Water and Wetland Biodiversity) Policy 2019* references the relevant basin for water in a particular sub-region. The drinking water Environmental Values and Water Quality Objectives are outlined in the corresponding policy document for the basin.	**AO2.1** Development does not generate wastewater. Or **AO2.2** If development generates wastewater, the wastewater is collected and contained on-site, and is: a) lawfully disposed to sewer; b) transferred off-site for treatment/disposal to an appropriately licensed facility; c) reused on-site in a closed-cycle irrigation scheme, industrial processes, washing/cleaning or other purpose; or d) treated to meet the drinking water supply water quality objectives prior to release. **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.

Performance outcomes	Acceptable outcomes
PO3 Where treated wastewater is irrigated to land, it will: 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. **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.	No acceptable outcome is nominated.
Solid waste	
PO4 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.	Land uses only. For all other development, only Performance Outcome PO4 is relevant **AO4.1** The stockpiling of waste litter, manure and other organics is undertaken as follows: 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. And **AO4.2** The reuse of waste litter, manure and other organics as soil conditioners or fertilizers is not undertaken on-site. And **AO4.3** Composting activities are not undertaken on-site. And **AO4.4** Carcasses are not buried on-site except as required in accordance with any emergency animal disease management plan required by a biosecurity agency.
PO5 Intensive animal industries within water resource catchments do not create a microbial risk to public health or the environment.	**AO5.1** Development involving stockpiling of manure wastes with microbial risks are to be pasteurised for pathogen kill-off before it leaves the site.

Performance outcomes	Acceptable outcomes
Sewage treatment and disposal (where development is located within a local government's priority infrastructure area)	
PO6 Development is connected to the reticulated sewerage network.	**AO6.1** No acceptable outcome is nominated.
Sewage treatment and disposal (where development is located outside of a local government's priority infrastructure area)	
PO7 Development provides an on-site sewage management system that is designed, constructed and managed in a way that does not compromise the environmental values for the supply of drinking water. **Note:** For a system under 21 Equivalent Persons, to demonstrate compliance with this performance outcome, it is recommended the applicant prepares a report using the Land Use Risk Tool and submits this as part of their application. **Note:** Developments involving the irrigation of sewage for a system over 21 Equivalent Persons will need to provide a MEDLI Modelling Report demonstrating the nominated land area for irrigation is suitably located and sized to accommodate design sewage loads, storages are suitably sized to accommodate design sewage 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.	**AO7.1** Development is connected to the reticulated sewerage network. Or **AO7.2** Where the combined total peak design capacity of sewage treatment is less than 21 Equivalent Persons (EP), the design of the system achieves a Medium or lower risk classification in accordance with Seqwater's Land Use Risk Tool for on-site sewage facilities. Or **AO7.3** Where the combined total peak design capacity of sewage treatment is 21EP or greater, the system is located and designed in the following manner: a) at or above the 0.5% AEP flood event (including climate change factors); b) the hydraulic capacity of the system is five times the average dry weather flow (ADWF); c) 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; d) where treated effluent will be used in irrigation, application is: 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 at or above the 0.5% AEP flood event; and e) where the combined total peak design capacity of sewage 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: 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: Managing Health and Environmental Risks (Phase 2) - Augmentation of Drinking Water Supplies (to be undertaken in consultation with Seqwater)*. **Note:** Developments involving the irrigation of sewage will need to provide a MEDLI Modelling Report demonstrating the nominated land area for irrigation is suitably located and sized to accommodate design sewage loads, storages are suitably sized to accommodate design sewage 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.

Performance outcomes	Acceptable outcomes
	Or **AO7.4** A holding tank associated with the on-site sewage management system: a) complies with the siting and setbacks in accordance with **Table 5** 'all other development types'; b) has at least one (1) week of holding capacity; c) is an above ground tank to enable detection of leaks; and d) is located on a concrete hardstand, with suitable spill well, bunded edge / lip. **AO7.5** For effluent holding tanks, the landowner must enter into a contract with a licensed waste removal contractor for scheduled pump out of sewage. Or **AO7.6** Where utilising an existing on-site sewage management system, provide certification from a licenced plumber that the on-site wastewater treatment and disposal facilities are functioning efficiently, have been regularly inspected and serviced, are of adequate capacity and in good condition to service the development. **Note:** A Site and Soil Evaluation with Wastewater Design is to be submitted with any application requiring new on-site wastewater management facilities in an unsewered location or where additional hydraulic loads are proposed to be directed to an existing on-site wastewater treatment system and effluent disposal area.
PO8 Solid and liquid wastes are managed and disposed of so that no increased risk of nuisance or environmental harm to drinking water source areas is created.	No acceptable outcome is prescribed.
PO9 Development handling pollutants is designed and operated to ensure spills and on-site surface water is captured and treated prior to release to the environment.	No acceptable outcome is prescribed.
Vegetation management	
PO10 Development protects and enhances riparian vegetation so that it protects against bank erosion and filters sediments, nutrients and other pollutants to ensure the environmental values for the supply of drinking water are not compromised.	**AO10.1** Vegetation Clearing does not occur within the following separation distances: a) 25m to a stream order 1–3; b) 50m to a stream order 4 or greater; and c) 200m to a full supply level of a dam, lake or reservoir or watercourse that serves as a potable water supply. And **AO10.2** Vegetation Clearing is not undertaken at or below the 1% AEP flood event (including climate change factors) or on a slope greater than 15%. **Note:** In addition to the above Acceptable Outcomes, prior to any clearing, development must ensure compliance with relevant legislation including *Vegetation Management Act 1999, Nature Conservation Act 1992, Environmental Offset Act 2014, Planning Act 2016 and Planning Regulation 2017.*

Performance outcomes	Acceptable outcomes
Stormwater quality and hydrology	
PO11 Stormwater drainage conveys run-off in a manner that: a) minimises risk to public safety, the environment and drinking water source areas; and b) provides a lawful point of discharge from each lot; and c) does not worsen drainage impacts on neighbouring sites.	No acceptable outcome is prescribed.
PO12 Development is sited, designed, constructed and managed to avoid or, where it is not possible to avoid, minimise adverse impacts on the environmental values and water quality of surface and ground water from: a) altered quality and hydrology; and b) the release and mobilisation of nutrients and sediments. **Note:** A hydrological assessment and erosion and sediment control plan undertaken by a suitably qualified person may be required to demonstrate no adverse impacts to surface and ground water quality and hydrology.	No acceptable outcome is prescribed.
PO13 Manage stormwater at the construction phase to protect drinking water supply environmental values and facilitate the achievement of water quality objectives for receiving waters. **Note:** Schedule 1 of the *Environmental Protection (Water and Wetland Biodiversity) Policy 2019* references the relevant basin for waters in a particular sub-region. The drinking water Environmental Values and Water Quality Objectives are outlined in the corresponding policy document for the basin.	**AO13.1** 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): Construction Phase – Stormwater management design objectives (all parts). Or **AO13.2** 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). Or **AO13.3** 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.

Performance outcomes	Acceptable outcomes
PO14 Development is located and designed to improve stormwater quality so that water source areas achieve aquatic ecosystem water quality objectives including drinking water supply environmental values. **Note:** Schedule 1 of the *Environmental Protection (Water and Wetland Biodiversity) Policy 2019* references the relevant basin for waters in a particular sub-region. The drinking water Environmental Values and Water Quality Objectives are outlined in the corresponding policy document for the basin.	**AO14.1** Development does not involve an aggregate impervious area greater than 1,000m². Or **AO14.2** Development is for reconfiguring a lot that; a) will not create more than two additional lots; or b) involves a land area less than 1000m². Or **AO14.3** 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: • 85% reduction in total suspended solids; • 65% reduction in total phosphorus; • 45% reduction in total nitrogen; and • 95% reduction in gross pollutants. Or **AO14.4** 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. **Note:** A Site-based 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.
PO15 Development adopts measures that exclude livestock from entering a waterbody or watercourse where a site is being used for intensive animal keeping, husbandry or grazing activities, to ensure the maintenance or improvement of the quality of surface water.	No acceptable outcome is nominated.

Performance outcomes	Acceptable outcomes
PO16 Development avoids and minimises changes to the existing surface water natural hydrological regime to ensure: 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.	No acceptable outcome is nominated.
PO17 Development does not create or modify watercourses within a water supply buffer area.	No acceptable outcome is nominated.
PO18 Development maintains the existing groundwater hydrological regime.	**AO18.1** 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 pre-development conditions. And **AO18.2** Development does not result in the ingress of saline water into freshwater aquifers. **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.
PO19 Development is not located within the defining bank of a watercourse or on steep, unstable or erosion prone land. **Note:** Where development is undertaken on land exceeding 15%, a geotechnical assessment must be undertaken by a suitably qualified and experienced geotechnical engineer and certified by a Registered Professional Engineer of Queensland (RPEQ) with geotechnical qualifications.	**AO19.1** Development does not involve in-stream extractive industries (e.g. commercial removal of sand or gravel materials). **AO19.2** Development does not occur on a slope greater than 15%.
Development over groundwater aquifers	
PO20 Development in drinking water source areas does not: a) compromise the water treatment process or treatment barriers; b) create a public health risk; c) increase operational and water treatment costs; d) impact ground water quality; e) exceed the capacity of water treatment plants; and f) result in significant upgrades or expansion of water treatment infrastructure.	No acceptable outcome is prescribed.

Performance outcomes	Acceptable outcomes
PO21 Development involving the handling, storage or disposal of hazardous materials and chemicals, does not occur over or near land with a groundwater aquifer, bore fields or drawdown sites used for sourcing drinking water to avoid localised contamination of the groundwater aquifer.	No acceptable outcome is prescribed.
PO22 Development protects the water quality, supply and security and environmental values of groundwater aquifers. **Note:** A groundwater model and development staging or sequencing plan should be prepared by an appropriately qualified person to demonstrate this outcome.	**AO22.1** Development is set back from groundwater aquifers, borefields and drawdown sites by 500m from the defined wellhead protection zone.
PO23 Groundwater aquifers, borefields and drawdown sites are protected from the intrusion of human and animal waste, including pollution from on-site wastewater management facilities.	**AO23.1** An exclusion zone is established between groundwater aquifers, borefields and drawdown sites, and on-site wastewater management systems. **AO23.2** Animal keeping does not occur within 500m of the defined wellhead protection zone for groundwater aquifers, borefields and drawdown sites.
PO24 Development is not proposed in the groundwater flow path of a groundwater aquifer's capture zone or in proximity to its production bores.	No acceptable outcome is prescribed.
Operational works - Excavation and filling	
PO25 The siting and design of earthworks minimises impacts on the natural landform that may cause contamination or interfere with the flow of an overland flow path, watercourse, waterbody or water supply source.	**AO25.1** Earthworks do not occur within: a) 25m setback to a stream order 1–3; b) 50m setback to a stream order 4 or greater; and c) 200m setback to a full supply level of a dam, lake or reservoir or watercourse which serves as a potable water supply. And **AO25.2** Earthworks are not undertaken at or below the 1% AEP flood event or on a slope greater than 15%.
PO26 Any earthworks minimise erosion and the movement of sediment off-site. **Note:** A Erosion and Sediment 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.	No acceptable outcome is prescribed.
Operational work – Vegetation clearing	
PO27 Clearing of vegetation is avoided in a watercourse, waterbody or buffer areas, to protect natural ecosystems and processes so that water quality is not adversely impacted.	No acceptable outcome is prescribed.

Performance outcomes	Acceptable outcomes
Dangerous goods, hazardous substances or environmentally hazardous materials	
PO28 Development either: a. does not involve the manufacturing or storage of hazardous materials and chemicals within drinking water source areas; or b. is designed so dangerous goods, hazardous substances or environmentally hazardous materials are stored and handled in a manner that minimises the potential for the release of hazardous materials and chemicals to drinking water source areas during a potential contamination event.	**AO28.1** The storage or handling of dangerous goods, hazardous substances or environmentally hazardous materials involves an aggregate quantity less than 200L or 200kg. Or **AO28.2** 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: a) 100m to a watercourse; and b) 800m to a full supply level of a dam, lake or reservoir or watercourse that serves as a potable water supply. And **AO28.3** 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 (including climate change factors); 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 an event where flood impacts the premises; and e) in accordance with Australian Standard AS 1940:2017 The Storage and Handling of Flammable and Combustible Liquids. Or **AO28.4** 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

Performance outcomes	Acceptable outcomes
Additional requirements for petroleum products	
PO29 Development involving the storage of petroleum products, including a service station, in water resource catchments avoids contamination risk to surface and ground water.	**AO29.1** The storage of petroleum products in bulk (greater than 1000L) aboveground uses self-bunded vessels that meet Australian Standard AS 1692:2006 Steel Tanks for Flammable and Combustible Liquids. Or **AO29.2** The storage of petroleum products in bulk (greater than 1000L) aboveground uses single-skin vessels installed within a bunded compound that: a) is sufficiently impervious (permeability should be $<10^{-9}$ 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. Or **AO29.3** 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 1692:2006 Steel Tanks for Flammable and Combustible Liquids and/or UL 1316 glass fibre reinforced plastic underground storage tanks for petroleum products, alcohols and alcohol gasoline mixture.
PO30 Development is designed, sited and constructed to prevent the emission of contaminants to land or waters and suitably addresses risks to water quality.	**AO30.1** Development does not result in hazardous materials discharging to land or waters. **AO30.2** Development ensures the storage of hazardous materials is: a) roofed or covered to prevent the ingress of rainfall and run-off, ensuring roof water is piped away from an area of potential spills or contamination; b) paved with an impervious surface and bunded so any spills are retained on-site for removal; c) above the 1% AEP flood event; and d) free of coastal hazards. **Note:** Refer to the relevant local government to determine the 1% AEP flood event. Where the local government does not have sufficient information seek this information form a Registered Professional Engineer of Queensland (RPEQ). **Note:** Refer to the relevant local government to determine the extent of coastal hazards that affect the premises. Where the local government does not have sufficient information OR has not appropriately incorporated the natural hazards (coastal hazards) state interest, refer to the State Planning Policy interactive mapping system. **AO30.3** Development provides: a) on-site covered storage for equipment, vehicles and machinery; d) wash down facilities for equipment, vehicles and machinery; d) continuous paved surfaces for vehicle manoeuvring and access to all parts of the premises which require vehicle access; and d) appropriate infrastructure to capture and/or treat all waste liquids and solids, other than stormwater, to prevent the emission of contaminants to land or waters. **AO30.4** Development treats any waste liquids or solids on-site, ensuring there is no risk of the release of contaminants to land or waters.

Performance outcomes	Acceptable outcomes
Material change of use for extractive industry only	
PO31 Extraction activities do not impact on erosion, natural fluvial processes, river bank stability or the storage capacity volume of a floodplain.	No acceptable outcome is nominated.
PO32 An extractive industry within water resource catchments does not discharge run-off to drinking water source areas from blasting, extraction, desludging, dewatering, concrete products, overburden, waterway crossings, haulage routes or other sources. **Note:** Refer to the *Planning Regulation 2017* for the definition of extractive industry, which includes the commercial extraction of groundwater.	No acceptable outcome is nominated.
PO33 Upon ceasing operations, premises used for extractive industry are rehabilitated by enhancing ecological functions and visual amenity of the premises and facilitating reuse of the land for a range of appropriate activities.	No acceptable outcome is nominated.
For reconfiguring a lot only	
PO34 When reconfiguring a lot, all resultant lots requiring an on-site wastewater management facility do not compromise water quality objectives and environmental values of drinking water source areas. **Note:** Schedule 1 of the *Environmental Protection (Water and Wetland Biodiversity) Policy 2019* references the relevant basin for waters in a particular sub-region. The drinking water Environmental Values and Water Quality Objectives are outlined in the corresponding policy document for the basin.	**AO34.1** Any new allotment can accommodate an area for on-site wastewater treatment and disposal complying with the following: a) 50m setback to a stream order 1–3; b) 100m setback to a stream order 4 or greater; and c) 400m setback to a full supply level of a dam, lake, reservoir or watercourse that serves as a potable water supply. And **AO34.2** Any new allotment can accommodate an area for on-site wastewater treatment and disposal that is at or above the 1% AEP flood event and on a slope at or below 10%. And **AO34.3** Any proposed allotments that are to accommodate a future on-site wastewater management facilities, maintain an average lot size of at least 2.5 ha, with no lots less than 4,000m². Or **AO34.4** For any reconfiguration of a lot not complying with all of the above Acceptable Outcomes, a Site and Soil Evaluation and Concept Wastewater Design is to be prepared by a suitably qualified professional demonstrating future on-site wastewater management facilities on new lots can achieve a 'medium' or lower risk rating under the Seqwater Land Use Risk Tool.
Use of fertilisers, herbicides and pesticides	
PO35 Development involving the handling and use of herbicides, pesticides and fertilisers is to be supported by an Environmental Impact Assessment to demonstrate no environmental harm or impacts to drinking water quality.	**AO35** Development ensures that the handling and use of herbicides, pesticides and fertilisers is not undertaken within: a) 250 metres of a water supply source; and b) 50 metres of a watercourse or waterbody.

Table 5: Separation distances and other locational criteria

Development type and activities	Stream order 1 to 3	Stream order 4 or greater	Full supply level of a dam[3], lake, reservoir or watercourse that serves as a potable water supply	Flood immunity
Animal Husbandry (including ancillary stockpiling of litter and manure)	50m	100m	800m	AEP 1%
Intensive animal industry (including ancillary stockpiling of litter and manure)	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%
Outdoor sport and recreation				Other infrastructure (e.g. trails) – AEP 20%
Major sport, recreation and entertainment facility				
Service station	50m	100m	800m	AEP 1%
All other development types	50m	100m	400m	AEP 1%

3. To assist with confirming the full supply level, refer to the relevant emergency action plan for each dam.

4.6 SCHEDULE 1 – DEFINITIONS

Table 6: Definitions

Term	Definition
Bulk water supply infrastructure	Bulk water supply infrastructure means the following infrastructure shown on the SPP IMS: • pump station facilities and reservoir facilities (current and future) • water treatment plants and water quality facilities (current and future) • pipelines and channels • bulk water storage infrastructure • bores • facilities for extracting groundwater.
Wastewater	Wastewater includes: • *Sewage as defined under the Water Supply (Safety and Reliability) Act 2008, schedule 3;* and • Wastewater generated by commercial, agricultural and industrial practices (e.g. factories, farms, transport and fuel depots, vessels, quarries and mines).
Watercourse	Any river, creek or stream with a stream order attributed under the *Vegetation Management Act 1999*.
Waterbody	Waterbody includes a dam, lake, reservoir or watercourse that serves as a bulk drinking water supply, excluding private dams.
Drinking water source area	Any area of land, including its watercourses and waterbodies used for collection of drinking water, being the 'Water Resource Area' and 'Water Supply Buffer Area' mapped for the State Planning Policy Water Quality State Interest. The water source area also includes the groundwater aquifers and recharge areas (this includes Minjerribah).


seqwater
WATER FOR LIFE