

Module 7. Water resources

7.1 Sustainable management of water resources state code

7.1.1 Purpose

The purpose of the code is to provide for the sustainable management of water and other resources.

7.1.2 Criteria for assessment

Subject to subsection (2), development mentioned in column 1 below must be assessed against the assessment criteria in the table mentioned in column 2.

Column 1	Column 2
Operational work	Table 7.1.1

Development mentioned in column 1 of Table 7.1.1 must comply with the relevant provisions of Table 7.1.2 and Table 7.1.3 mentioned in column 2 of Table 7.1.1.

Table 7.1.1: Development and relevant provisions of the code

Development	Relevant provisions of code
For works that take or interfere with water in a <u>watercourse</u> , <u>lake</u> or <u>spring</u> .	Table 7.1.2 —General: PO1–PO4
For works that take or interfere with <u>artesian water</u> or <u>subartesian water</u> .	Table 7.1.2 —General: PO1–PO4 Table 7.1.2 — <u>Artesian water</u> and <u>subartesian water</u> : PO5–PO6
For works that take <u>overland flow water</u> where the works are reconfiguring <u>existing works</u> .	Table 7.1.2 —General: PO1–PO4 Table 7.1.2 —Overland flow: PO7–PO8 Table 7.1.2 —Reconfiguring <u>existing works</u> : PO9–PO12
For works that take <u>overland flow water</u> in a limited catchment area identified in a <u>water resource plan</u> .	Table 7.1.2 —General: PO1–PO4 Table 7.1.2 —Overland flow: PO7–PO8 Table 7.1.2 —Limited catchment area: PO13
For works that take <u>overland flow water</u> or <u>contaminated agricultural run-off water</u> .	Table 7.1.2 —General: PO1–PO4 Table 7.1.2 —Overland flow: PO7–PO8 Table 7.1.2 —Contaminated agricultural run-off: PO14
For works that take <u>overland flow water</u> as part of an environmentally relevant activity or under an <u>environmental authority</u> .	Table 7.1.2 —General: PO1–PO4 Table 7.1.2 —Overland flow: PO7–PO8 Table 7.1.2 —Environmentally relevant activity: PO15
For works that take <u>overland flow water</u> as a result of rehabilitating degraded land.	Table 7.1.2 —General: PO1–PO4 Table 7.1.2 —Overland flow: PO7–PO8 Table 7.1.2 —Rehabilitating degraded land: PO16–PO17
For works that take <u>overland flow water</u> , incidental to capturing <u>coal seam gas water</u> .	Table 7.1.2 —General: PO1–PO4 Table 7.1.2 —Overland flow: PO7–PO8 Table 7.1.2 — <u>Coal seam gas water</u> : PO18
For works that take <u>overland flow water</u> , where prescribed in a <u>water resource plan</u> or a regulation under the <i>Water Act 2000</i> .	Table 7.1.2 —General: PO1–PO4 Table 7.1.2 —Overland flow: PO7–PO8

Table 7.1.2: Operational work

Performance outcomes	Acceptable outcomes
General	
PO1 Works do not adversely impact on the natural riverine ecosystem.	No acceptable outcome is prescribed.
PO2 Works do not adversely impact other users' ability to access the resource.	No acceptable outcome is prescribed.
PO3 Works do not adversely impact on the physical integrity of the <u>watercourse</u> .	No acceptable outcome is prescribed.
PO4 Works are located and constructed in a way that is consistent with any of the following, to the extent they are relevant to the proposed development: (1) a <u>water resource plan</u> (2) a <u>resource operations plan</u> (3) a moratorium notice issued under the <i>Water Act 2000</i> . Editor's note: Moratorium notices are published on the DNRM website.	No acceptable outcome is prescribed.
Artesian and subartesian water	
PO5 Works maintain the natural ecosystem processes of the artesian or subartesian system.	No acceptable outcome is prescribed.
PO6 Works are to minimise impact on connectivity between <u>artesian water</u> or <u>subartesian water</u> and surface water.	No acceptable outcome is prescribed.
Overland flow	
PO7 Works are located and constructed in a way that minimises adverse impacts on neighbouring properties.	A07.1 Works are contained within the property boundaries. AND A07.2 At full supply level, the area inundated is contained within the property boundaries. AND A07.3 Any <u>bywash</u> resulting from the works, and any water diverted away from contaminated areas, exits the premises as close as practicable to the same location to which it exited the property boundary prior to construction of the works.
PO8 Works are constructed and operated in accordance with a <u>certified report</u> . Editor's note: If a water licence has been granted for the proposed development a certified report is not required.	A08.1 The works are for: (1) taking a maximum of 12 megalitres of <u>contaminated agricultural run-off water</u> , or (2) taking for stock and domestic purposes, or (3) rehabilitating degraded land.
Reconfiguring existing works	
PO9 Construction of new works must not increase overall take or increase: (1) the capacity of the works to store water (2) the rate at which the works take water (3) the average volume of water taken by the works.	No acceptable outcome is prescribed.
PO10 Works must not involve reconfiguration of natural bodies of water or bunded areas.	No acceptable outcome is prescribed.

Performance outcomes	Acceptable outcomes
<p>PO11 Works must not involve reconfiguration of storage capacity of any of the following:</p> <ol style="list-style-type: none"> (1) a <u>lake</u> that was not used for irrigation or other <u>intensive stocking</u> or production (2) land being used for irrigated or dryland agriculture or areas surrounded by levee banks designed to prevent the land becoming inundated (3) naturally occurring infield storages. 	No acceptable outcome is prescribed.
<p>PO12 New works must be located within the same property boundaries as the <u>existing works</u>.</p>	No acceptable outcome is prescribed.
Limited catchment area	
<p>PO13 In the limited catchment areas, any works for storing water must not:</p> <ol style="list-style-type: none"> (1) be larger than necessary for storing water other than <u>overland flow water</u>, or (2) be able to take <u>floodwater</u> overflowing from any adjacent <u>watercourse</u>. <p>Editor's note: Limited catchment areas are listed in Table 7.5.1, column 2.</p>	<p>AO13.1 In the limited catchment areas (identified in Table 7.5.1, column 1), the <u>incidental take of overland flow water</u>:</p> <ol style="list-style-type: none"> (1) is located within the sub-catchment/management area listed in Table 7.5.1, column 2 for the relevant limited catchment area (2) is stored in a local catchment area that is less than or equal to the area of the limited catchment area specified in Table 7.5.1, column 3.
Contaminated agricultural run-off	
<p>PO14 If development involves storage capacities of 12 megalitres or greater, the storage capacities must:</p> <ol style="list-style-type: none"> (1) be necessary because there is no alternative way to take the water by reconfiguring <u>existing works</u> (2) be no larger than necessary to contain <u>contaminated agricultural run-off water</u> or tailwater (3) minimise the volume of water that becomes <u>contaminated agricultural run-off water</u> (4) where practicable, allow for water that is not <u>contaminated agricultural run-off water</u> or tailwater to be passed through the works. 	No acceptable outcome is prescribed.
Environmentally relevant activity	
<p>PO15 Works capture no more <u>overland flow water</u> than is necessary for the operation of the environmentally relevant activity or environmental authority under the <i>Environmental Protection Act 1994</i>.</p>	No acceptable outcome is prescribed.
Rehabilitating degraded land	
<p>PO16 The maximum height or depth of any part of the works is 400 millimetres.</p>	No acceptable outcome is prescribed.
<p>PO17 The works are only for rehabilitating degraded land, as certified by:</p> <ol style="list-style-type: none"> (1) a soil scientist, stating that the area to be inundated is degraded and the works are an appropriate method for rehabilitation, or 	<p>AO17.1 The area inundated as a result of the rehabilitation is 2 hectares or less.</p>

Performance outcomes	Acceptable outcomes
(2) a requirement of the <i>Land Act 1994</i> , or (3) the works have been approved for funding under the Primary Industry Productivity Enhancement Scheme.	
Coal seam gas water	
PO18 Any storage for the works must: <ol style="list-style-type: none"> (1) be no larger than necessary to store <u>coal seam gas water</u> for the <u>beneficial use</u> of the resource under Chapter 8 of the <i>Waste Reduction and Recycling Act 2011</i> (2) minimise the volume of <u>overland flow water</u> that is taken (3) not have the ability to take <u>floodwater</u> from any adjacent <u>watercourse</u> (4) not contain <u>coal seam gas water</u> that could be stored in an existing alternative storage. 	No acceptable outcome is prescribed.

7.2 Removal of quarry material state code

7.2.1 Purpose

The purpose of the code is to provide for the sustainable removal of quarry material and management of water resources.

7.2.2 Criteria for assessment

Development mentioned in column 1 below must be assessed against the assessment criteria in the table mentioned in column 2.

Column 1	Column 2
Various aspects of development	Table 7.2.1

Table 7.2.1: Various aspects of development

Performance outcomes	Acceptable outcomes
Riverine quarry material	
PO1 Development does not adversely impact on the natural riverine ecosystem.	No acceptable outcome is prescribed.
PO2 Development does not adversely impact other users' ability to access the resource.	No acceptable outcome is prescribed.
PO3 Development does not adversely impact on the physical integrity of the <u>watercourse</u> or <u>lake</u> .	No acceptable outcome is prescribed.
PO4 The development is located and constructed in a way that is consistent with any of the following to the extent they are relevant to the proposed development: <ol style="list-style-type: none"> (1) a <u>water resource plan</u> (2) a <u>resource operations plan</u> (3) a moratorium notice issued under the 	No acceptable outcome is prescribed.

Performance outcomes	Acceptable outcomes
<p><i>Water Act 2000.</i></p> <p>Editor's note: Moratorium notices are published on the DNRM website.</p>	
<p>PO5 Development does not adversely impact on downstream features, including but not limited to estuaries and beaches, that naturally require riverine <u>quarry material</u> from the <u>watercourse</u> or <u>lake</u>.</p>	No acceptable outcome is prescribed.
<p>PO6 Development is carried out in a way that does not adversely impact built infrastructure such as road crossings, bridges, weirs and pump sites.</p>	No acceptable outcome is prescribed.

7.3 Particular levees state code

7.3.1 Purpose

The purpose of the code is to ensure the community's resilience to the impacts of flood events is maintained or enhanced by the Category 3 levee.

7.3.2 Criteria for assessment

Development mentioned in column 1 below must be assessed against the assessment criteria in the table mentioned in column 2.

Column 1	Column 2
Operational work	Table 7.3.1

Table 7.3.1: Operational work for a Category 3 levee

Performance outcomes	Acceptable outcomes
<p>PO1 The <u>Category 3 levee</u> must be designed, constructed and managed such that it maintains or enhances the <u>resilience</u> of <u>impacted people</u> to the potential impacts of the <u>levee</u>.</p> <p>Editor's note: Refer to the <i>Guidelines for the construction and modification of levees</i>, Department of Natural Resources and Mines, 2014 for guidance on meeting the performance outcome, including through:</p> <ul style="list-style-type: none"> (a) carrying out a risk assessment of the potential impacts of the <u>levee</u> on the community's <u>resilience</u> (b) carrying out an analysis of the proposed mitigation measures (c) undertaking public consultation. 	No acceptable outcome is prescribed.

7.4 Reference documents

Department of Natural Resources and Mines 2014 [Guidelines for the construction and modification of levees](#)
 Queensland Government Business and Industry Portal 2015 [Overland flow works that require certification](#)

7.5 Reference tables

Table 7.5.1 Limited catchment area parameters

Column 1: Water resource plan area	Column 2: Sub-catchment/ management area	Column 3: Area of local catchment
Fitzroy Basin	Fitzroy, Lower Mackenzie, Upper Mackenzie, Lower Dawson, Upper Dawson, Isaac Connors, Nogoia and Comet	250 ha

7.6 Glossary of terms

Artesian water see the *Water Act 2000*, schedule 4.

Editor's note: Artesian water means water that occurs naturally in, or is introduced artificially into, an aquifer, which if tapped by a bore, would flow naturally to the surface.

Beneficial use means the resource such as water has a beneficial use other than disposal. An example of beneficial use is reusing or recycling water.

Bywash means water that is diverted from a dam or reservoir and is usually associated with a pipe or other structure to prevent uncontrolled overtopping.

Category 3 levee see the *Water Regulation 2002*

Editor's note: Category 3 levee means a levee that has off-property impacts and affects 3 or more impacted people.

Certified report is a report:

- (1) produced and certified by a person:
 - (a) who is an RPEQ
 - (b) who has relevant farm water supply discipline experience if the proposed development is for agricultural production
- (2) that is prepared in accordance with or consideration of the information on certified reports provided on the Queensland Government Business and Industry Portal for 'overland flow works that require certification'.

Coal seam gas water means underground water brought to the surface of the earth or moved underground in connection with exploring for or producing coal seam gas.

Contaminated agricultural runoff water means overland flow water that contains, or is likely to contain, excess nutrients or farm chemicals at levels potentially harmful to the quality of water in a watercourse.

Environmental authority see the *Environmental Protection Act 1994*.

Editor's note: Environmental authority means generally an environmental authority issued under section 195 of the *Environmental Protection Act 1994* that approves an environmentally relevant activity applied for in an application.

Existing works means works that allow taking of overland flow water that are in existence at the time the relevant development application is made.

Flood channel means a natural secondary channel on a floodplain that carries water during flood events. This term includes distributary channels that disperse waters across floodplains and terminal wetlands, and flood runners that are shallow channels with entry and exit points off watercourses.

Floodplain see the *Water Act 2000*.

Editor note: Floodplain means an area of reasonably flat land adjacent to a watercourse that—

- (a) is covered from time to time by floodwater overflowing from the watercourse; and
- (b) does not, other than in an upper valley reach, confine floodwater to generally follow the path of the watercourse; and
- (c) has finer sediment deposits than the sediment deposits of any bench, bar or in-stream island in the watercourse.

Floodwater see the *Water Act 2000*.

Editor's note: Floodwater, in relation to a watercourse or lake, means water that has overflowed the outer banks of the watercourse, or the bed and banks of the lake, because of a flood event affecting the watercourse or lake, and is on land near the watercourse or lake.

Incidental take of overland flow water means to take overland flow water in a storage that is primarily for storing water from a source other than overland flow.

Intensive stocking is a technique of stocking land on a long term basis above what is normally considered to be the carrying capacity of the land, for example, by implementing strategic or rotational grazing.

Impacted people mean those people residing or otherwise occupying buildings that are impacted by the levee.

Lake see the *Water Act 2000*, schedule 4.

Editor's note: Lake includes –

- (a) if a feature is identified on the watercourse identification map as a lake—means the feature identified on the map; or
- (b) otherwise, includes –
 - i. a lagoon, swamp or other natural collection of water, whether permanent or intermittent
 - ii. the bed and banks and any other element confining or containing the water.

Levee see the *Water Act 2000*, schedule 4.

Editor's note: Levee means an artificial embankment or structure which prevents or reduces the flow of overland flow water onto or from land. A levee includes levee-related infrastructure.

Off-property impacts see the *Water Regulation 2002*

Editor's note: Off-property impacts are:

- (1) a change to the flow path of overland flow water where it enters or exits the property
- (2) a change to the velocity of flow beyond the boundaries of the property
- (3) a change to the flooded area beyond the boundaries of the property
- (4) a change to the flood height beyond the boundaries of the property.

Overland flow water see the *Water Act 2000*, schedule 4.

Editor's note: Overland flow water –

- (1) means water, including floodwater, that is urban stormwater or is other water flowing over land, otherwise than in a watercourse or lake –
 - (a) after having fallen as rain or in any other way, or
 - (b) after rising to the surface naturally from underground.
- (2) does not include –
 - (a) water that has naturally infiltrated the soil in normal farming operations, including infiltration that has occurred in farming activity such as clearing, replanting and broadacre ploughing, or
 - (b) tailwater from irrigation if the tailwater recycling meets best practice requirements, or
 - (c) water collected from roofs for rainwater tanks.

Quarry material see the *Water Act 2000*, schedule 4.

Editor's note: Quarry material means material, other than a mineral within the meaning of any Act relating to mining, in a watercourse or lake. Quarry material includes stone, gravel, sand, rock, clay, earth and soil unless it is removed from the watercourse or lake as waster material.

Resilience means the ability to adapt to changing conditions and prepare for, withstand and rapidly recover from disruption.

Resource operations plan see the *Water Act 2000*, schedule 4.

Editor's note: Resource operations plan means a plan approved under section 103(5) of the *Water Act 2000*.

Same premises means contiguous parcels of land or tenure under the same land ownership or tenure holder.

Subartesian water see the *Water Act 2000*, schedule 4.

Editor's note: Subartesian water means water that occurs naturally in, or is introduced artificially into, an aquifer, which if tapped by a bore, would not flow naturally to the surface.

Water resource plan see the *Water Act 2000*, schedule 4.

Editor's note: Water resource plan means a plan approved under section 50(2) of the *Water Act 2000*.

Watercourse see the *Water Act 2000*, schedule 4.

Editor's note: A watercourse

- (1) is a river, creek or other stream, including a stream in the form of an anabranch or a tributary, in which water flows permanently or intermittently, regardless of the frequency of flow events –
 - (a) in a natural channel, whether artificially modified or not, or
 - (b) in an artificial channel that has changed the course of the stream.
- (2) A watercourse includes any of the following located in it –
 - (a) in-stream islands
 - (b) benches

- (c) bars
- (3) However, a watercourse does not include a drainage feature
- (4) Further—
 - (a) Unless there is a contrary intention, a reference to a watercourse in the *Water Act 2000*, other than in section 5 or in the definitions in schedule 4 to the extent they support the operation of section 5, is a reference to anywhere that is—
 - (i) upstream of the downstream limit of the watercourse
 - (ii) between the lateral limits of the water course.
 - (b) a reference to the *Water Act 2000* to, or a to a circumstance that involves, land adjoining a watercourse, is a reference to, or a circumstance that involves, and effectively adjoining a watercourse.

7.7 Abbreviations

DNRM – Department of Natural Resources and Mines

RPEQ – Registered Professional Engineer Queensland