
Northern and Yorke

Landscape Board

**Water-Affecting
Activities
Control Policy**

Effective from 6th December 2020

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Northern and Yorke Water-Affecting Activity Control Policy

Introduction

This Water Affecting Activity (WAA) Control Policy is made under Section 102 of the *Landscape South Australia Act 2019* (the Act). It has three parts:

- Section 1 explains which WAA permit rules and Water Allocation Plan principles apply in different parts of the Northern and Yorke landscape region
- Section 2 sets out the WAA policies which apply to the majority of the Northern and Yorke landscape region, where water resources are not prescribed.
- Section 3 sets out the WAA policies which apply to smaller sections of the remainder of the Northern and Yorke landscape region, where water resources are not prescribed.

In accordance with the Act, Sections 2 and 3 specify the activities for which a WAA Permit is required, and set out the matters to be considered when granting a WAA Permit. These rules are substantially the same as provisions made previously under the *Natural Resources Management Act 2004* and contained in Regional NRM Plans. The rules in these former Plans no longer apply, and are replaced by the rules in this Water Affecting Activities Control Policy (this Policy), pursuant to the Act.

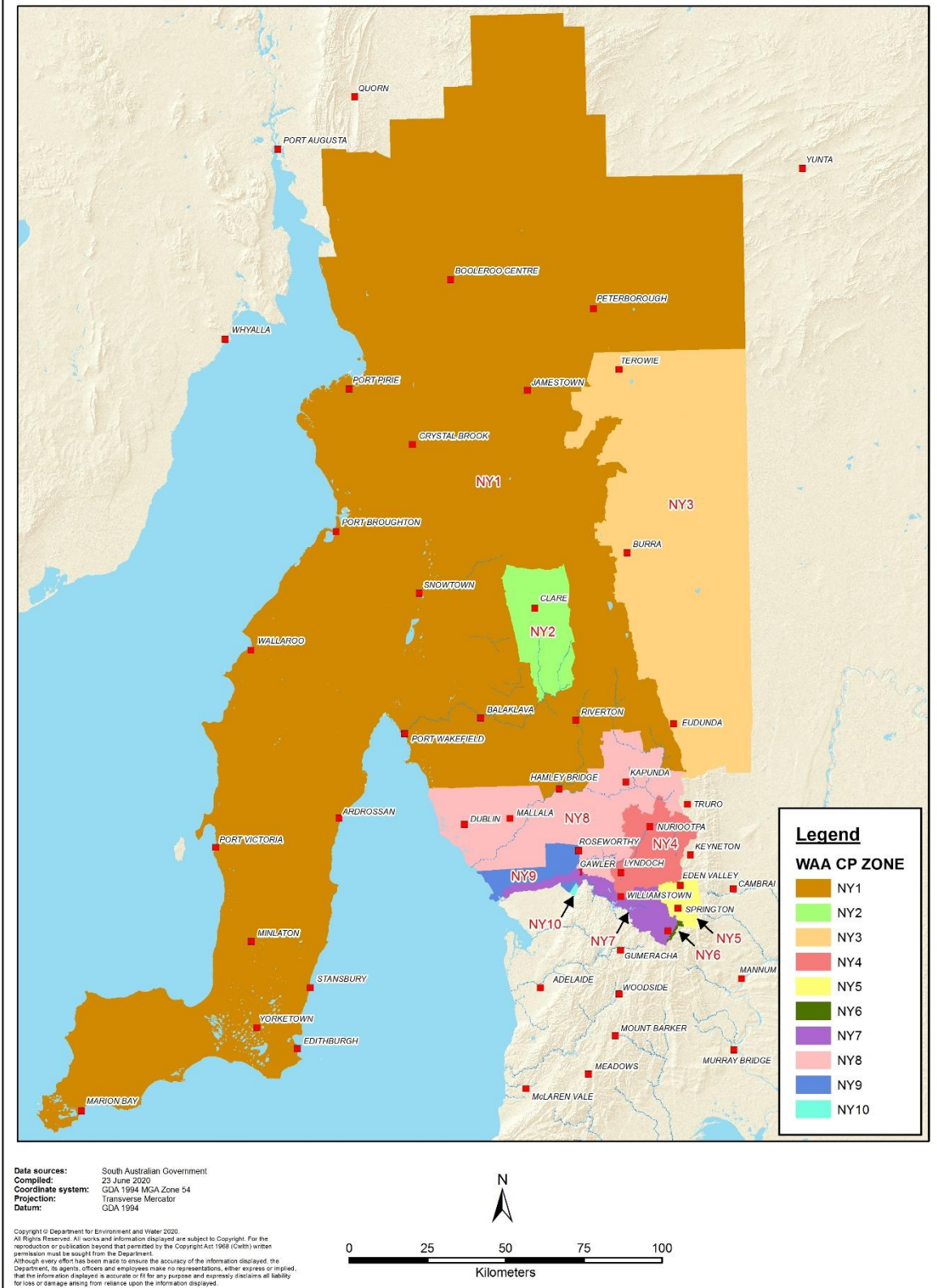
Section 1: Water-Affecting Activity Zones and Rules

1.1 Prescribed and non-prescribed areas

The Northern and Yorke region includes all or parts of several prescribed water resources or prescribed wells areas, where the permit provisions of water allocation plans apply to water-affecting activities. It also includes some 'non-prescribed', areas where the provisions of regional NRM Plans formerly applied. These areas have been delineated as 'zones' to indicate where, and for which activities, the WAP rules or the rules of this Policy apply. The zones are shown in Map 1, and are derived as follows.

Zone	Area/s within Northern and Yorke landscape management region
NY1	not covered by any water resources prescription, within former N&Y NRM boundary
NY2	covered by Clare Valley Prescribed Water Resources Area, within former N&Y NRM boundary
NY3	not covered by any water resources prescription, within former SAMDB NRM boundary
NY4	covered by Barossa Prescribed Water Resources Area, within former AMLR NRM boundary
NY5	covered by Marne Saunders Prescribed Water Resources Area, within former SAMDB NRM boundary
NY6	covered by Eastern Mount Lofty Ranges Prescribed Water Resources Area, within former SAMDB NRM boundary
NY7	covered by Western Mount Lofty Ranges Prescribed Water Resources Area, within former AMLR NRM boundary
NY8	not covered by any water resources prescription, within former AMLR NRM boundary
NY9	covered by Northern Adelaide Plains Prescribed Wells Area, within former AMLR NRM boundary
NY10	covered by Central Adelaide Prescribed Wells Area, within former AMLR NRM boundary

Map 1 Northern & Yorke landscape management region WAA CP Zones



1.2 Relevant water-affecting activities and authorities

Section 104 of the Act specifies the activities that may be regulated by a WAA Permit. The water-affecting activities covered by either a WAP or this WAA CP in the Northern and Yorke landscape region are shown in Table 1, together with the relevant approval authority. Under this Policy, a person may only undertake the activities listed in Table 1.1 if the relevant authority shown in Table has granted a permit to authorise the activities.

The Act also provides for additional water-affecting activities to be prescribed by Regulation (104 (4) (l)).

Table 1.1: Water-affecting activities and relevant authorities

The relevant authorities listed below are consistent with the provisions of the Act, and with arrangements that applied prior to the commencement of landscape management boards.

Water-affecting activities	Relevant authority
<i>Water diversion and storage - erection, construction, modification, enlargement, or removal of a dam, wall or other structure</i>	Northern and Yorke Landscape Board*
<i>Building a structure in a watercourse, lake or floodplain</i>	Northern and Yorke Landscape Board*
<i>Drainage or discharge of water into a watercourse or lake</i>	Northern and Yorke Landscape Board*
<i>Depositing objects or solid material in a watercourse or lake</i>	Northern and Yorke Landscape Board*
<i>Excavation or removal of rock, sand or soil</i>	Northern and Yorke Landscape Board*
<i>Destroying vegetation growing in a watercourse or lake, or growing on the floodplain of a watercourse</i>	Northern and Yorke Landscape Board*
<i>Use of imported water and effluent</i>	Minister
<i>Well construction and repair - drilling, plugging, backfilling, sealing, replacing, repairing or altering a well, drilling a monitoring well</i>	Minister
<i>Draining or discharge of water directly or indirectly into a well</i>	Minister
<i>Commercial forestry</i>	Minister

* where this water-affecting activity relates to a section of the Gawler River which forms the boundary between the Northern and Yorke and Green Adelaide landscape management regions, the relevant authority may be either of the Boards, and only one WAA permit is required, as set out in Section 2 of this Policy.

1.3 Location of WAA rules

Table 1.2 shows the location of the WAA rules which apply for each activity. Where the WAA rules which apply are part of a WAP, they may be found here:

- Clare Valley WAP [hyperlink](#)
- Barossa WAP [hyperlink](#)
- Marne Saunders WAP [hyperlink](#)
- Northern Adelaide Plains WAP (to be replaced by the Adelaide Plains WAP when adopted) [hyperlink](#)
- WMLR WAP Chapter 8 [hyperlink](#)
- EMLR WAP Chapter 7 [hyperlink](#)

When the Adelaide Plains WAP is adopted, some principles in this Policy will be replaced by principles in the WAP.

Where the WAA rules which apply to an activity are not part of a WAP, they may be found in Sections 2

of this Policy, which are based on former NRM Plan rules as follows:

Section 2.2: replicates the WAA policies in the former Northern and Yorke NRM region 2019 – 2022 Business Plan

Section 2.3: based on a combination of the Adelaide and Mount Lofty Ranges NRM Plan. Volume 2: Business and Operational Plan 2019–20 to 2021–22, and the SA Murray-Darling Basin NRM Plan. Volume B: Board Business and Operational Plan, 2016/17-2018/19.

Table 1.2: Rules applying to WAA activities in each zone

104 (3) (d): Water diversion and storage - erection, construction, modification, enlargement, or removal of a dam, wall or other structure									
NY1	NY2	NY3	NY4	NY5	NY6	NY7	NY8	NY9	NY10
Sec 2 of this Policy	Clare Valley WAP 8.2	Sec 3 of this Policy	Barossa WAP 7.2	Marne Saunders WAP 8.5	EMLR WAP 7.2.1	WMLR WAP 8.5	Sec 3 of this Policy	Sec 3 of this Policy	Sec 3 of this Policy
104 (4) (b): Building a structure in a watercourse, lake or floodplain									
NY1	NY2	NY3	NY4	NY5	NY6	NY7	NY8	NY9	NY10
Sec 2 of this Policy	Clare Valley WAP 8.3	Sec 3 of this Policy	Sec 3 of this Policy	Marne Saunders WAP 8.6	EMLR WAP 7.2.2	Sec 3 of this Policy	Sec 3 of this Policy	Sec 3 of this Policy	Sec 3 of this Policy
104 (4) (c): Drainage or discharge of water into a watercourse or lake									
NY1	NY2	NY3	NY4	NY5	NY6	NY7	NY8	NY9	NY10
Sec 2 of this Policy	Clare Valley WAP Sec 8.4	Sec 3 of this Policy	Sec 3 of this Policy	Marne Saunders WAP 8.7	EMLR WAP 7.2.3	Sec 3 of this Policy	Sec 3 of this Policy	Sec 3 of this Policy	Sec 3 of this Policy
104 (4) (d), (e) and (f): Depositing objects or solid material in a watercourse, lake or floodplain									
NY1	NY2	NY3	NY4	NY5	NY6	NY7	NY8	NY9	NY10
Sec 2 of this Policy	Clare Valley WAP 8.5 & 8.6	Sec 3 of this Policy	Sec 3 of this Policy	Sec 3 of this Policy	EMLR WAP 7.2.4	Sec 3 of this Policy	Sec 3 of this Policy	Sec 3 of this Policy	Sec 3 of this Policy
104 (4) (h): Excavation or removal of rock, sand or soil									
NY1	NY2	NY3	NY4	NY5	NY6	NY7	NY8	NY9	NY10
Sec 2 of this Policy	Clare Valley WAP 8.8	Sec 3 of this Policy	Sec 3 of this Policy	Marne Saunders WAP 8.9	EMLR WAP 7.2.5	Sec 3 of this Policy	Sec 3 of this Policy	Sec 3 of this Policy	Sec 3 of this Policy
104 (4) (g): Destroying vegetation growing in a watercourse or lake, or growing on the floodplain of a watercourse									
NY1	NY2	NY3	NY4	NY5	NY6	NY7	NY8	NY9	NY10
Sec 2 of this Policy	Clare Valley WAP 8.7	Sec 3 of this Policy	Sec 3 of this Policy	Marne Saunders WAP 8.8	Section 3 of this Policy	Sec 3 of this Policy	Sec 3 of this Policy	Sec 3 of this Policy	Sec 3 of this Policy
104 (3) (a) and (b): Well construction and repair - drilling, plugging, backfilling, sealing, replacing, repairing or altering a well, drilling a monitoring well									
NY1	NY2	NY3	NY4	NY5	NY6	NY7	NY8	NY9	NY10
Sec 2 of this Policy	Clare Valley WAP	Sec 3 of this Policy	Barossa WAP 7.5	Marne Saunders WAP 8.3	EMLR WAP 7.2.6	Sec 3 of this Policy	Sec 3 of this Policy	NAP WAP 7.2 &	Sec 3 of this Policy*

	8.10							7.3*	
104 (4) (i) and (j): Use of imported water and effluent									
NY1	NY2	NY3	NY4	NY5	NY6	NY7	NY8	NY9	NY10
Sec 2 of this Policy for (i) (j) n/a	Clare Valley WAP 8.9 & 8.12	Sec 3 of this Policy	Barossa WAP 7.3	Marne Saunders WAP 8.10	EMLR WAP 7.2.7	WMLR WAP 8.3	Sec 3 of this Policy	NAP WAP 7.5 & 7.6*	Sec 3 of this Policy*
104 (3) (c): Draining or discharge of water directly or indirectly into a well									
NY1	NY2	NY3	NY4	NY5	NY6	NY7	NY8	NY9	NY10
Sec 2 of this Policy	Clare Valley WAP 8.11	Sec 3 of this Policy	Barossa WAP 7.4	Marne Saunders WAP 8.4	EMLR WAP 7.2.8	WMLR WAP 8.4	Sec 3 of this Policy	NAP WAP 7.4*	Sec 3 of this Policy*
104 (4) (k): Undertaking commercial forestry									
NY1	NY2	NY3	NY4	NY5	NY6	NY7	NY8	NY9	NY10
n/a	n/a	n/a	n/a	n/a	EMLR WAP 7.2.9	WMLR WAP 8.6	n/a	n/a	n/a

* Until Adelaide Plains WAP adopted

Section 2 Water-affecting activities permit policies

This section is structured as follows:

Part 2.1 describes the general policies and processes that apply to WAA applications not covered by WAPs, in all zones across the Northern and Yorke landscape management region.

Part 2.2 sets out specific principles applying to zone NY1, in addition to those described in 2.1

Part 2.3 sets out specific principles applying to zones NY2 – NY10, in addition to those described in 2.1.

2.1 General policies and processes

2.1.1 Introduction

Section 102 (3) (c) of the Landscape SA Act 2019 (the Act) requires the Northern and Yorke Landscape Board to set out matters it will consider when exercising its powers to grant or refuse permits under Part 8 Division 2 of the Act.

A permit is required for water affecting activities (WAAs) contained within section 104 of the Act. Some activities are excluded from requiring a permit under section 106 of the Act; this includes some activities which are approved under other legislation, such as the *Environment Protection Act 1993* or the *Planning Development and Infrastructure Act 2016*. In addition, the Board has identified some instances where activities that would otherwise require a permit are excluded.

Sections 2.1 and 2.2 each include a Table showing the ‘WAAs excluded from requiring a permit – general exclusions’ and ‘WAAs excluded from requiring a permit – specific exclusions’). These tables also identify the relevant authority for assessing permit applications for each type of activity.

2.1.2 Water allocation plan interface

A water allocation plan may set out policies that the relevant authority will take into account when considering an application for a WAA permit. The WAA policies in a water allocation plan do not overlap with the policies in this WAA Control Policy. The policies apply separately to specific activities in specific zone, as outlined in Section 1.

2.1.3 Process to assess WAA applications

The broad steps in assessing a WAA permit application are as follows. Figure 2.3.1 sets out the assessment process in more detail.

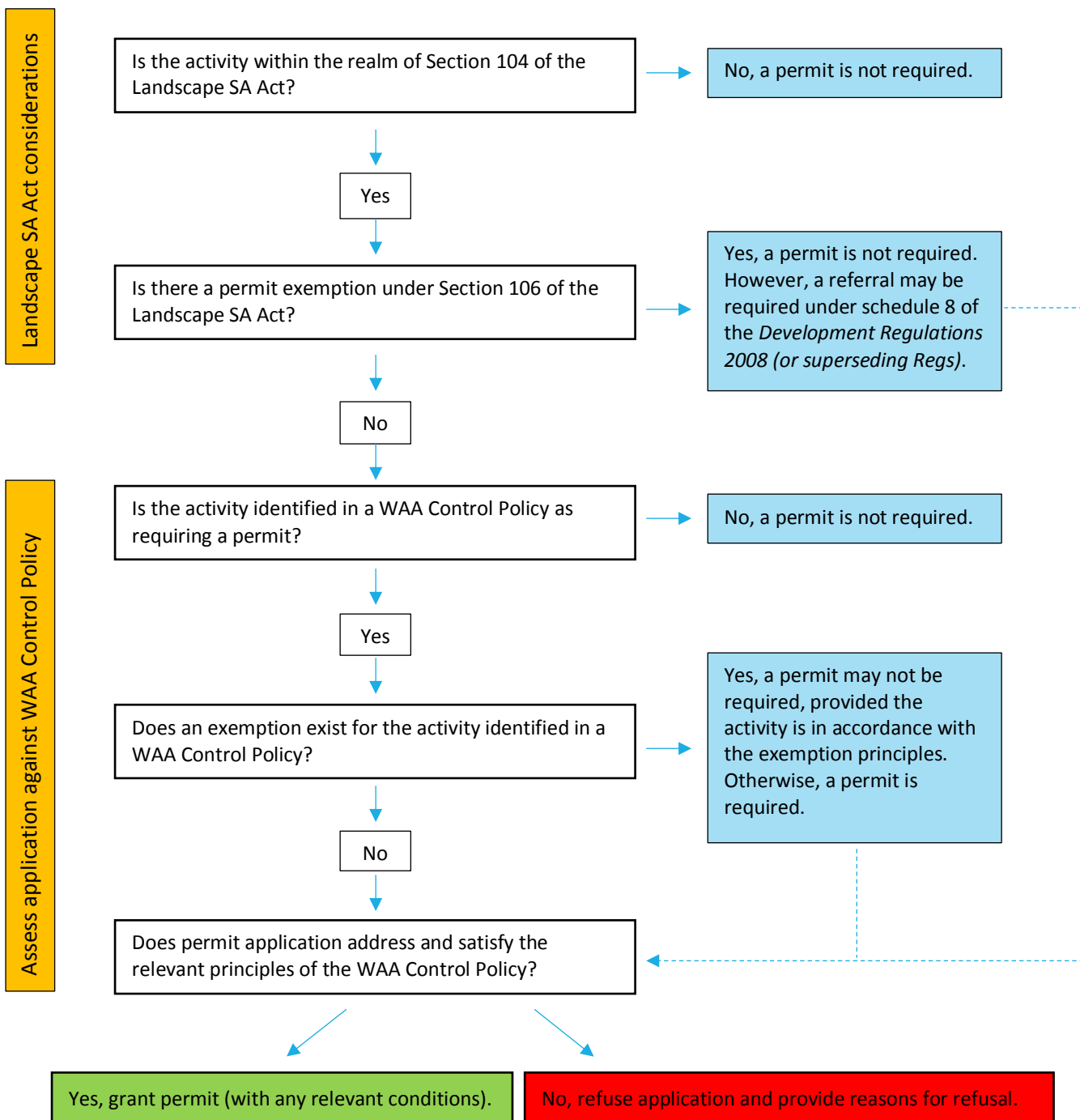
- Ascertain the nature and scope of the WAA with reference to section 104 of the Act.
- Precisely define the affected site and determine if it is in an area regulated by a WAP.
- Ensure sufficient information has been provided by the applicant to enable the relevant authority to make an informed decision.
- Determine if the WAA permit application qualifies as an exclusion. If the application does not qualify, it will be assessed via the ‘on merit’ process.
- Assess ‘on merit’ applications against the WAA permit policies in this section, or the relevant WAP as appropriate.

2.1.4 Applications related to watercourse on a boundary

Within the Northern and Yorke landscape management region, the Gawler River has a section which forms part of the boundary between the Northern and Yorke and the Green Adelaide landscape management regions. If a WAA activity relates to this section of watercourse, only one WAA permit is required and the relevant authority may be either of the relevant Boards. The same WAA permit policies apply in all cases, regardless of the assessment authority.

Figure 2.3.1 Assessment process

A WAA permit application is assessed using the following steps:



Applicant can appeal at the ERD Court against a refusal of a permit or a permit condition as per Section 216 of the Landscape South Australia Act.

2.1.5 Public Notification

Public notification is not required for any WAA permit applications under the Act.

2.1.6 Best Practice Operating Procedures

The Board has determined a process for granting exemptions for local government and other statutory authorities for particular Water Affecting Activities that would otherwise require a permit.

An exemption to requiring a permit may be granted when all of the following points are met:

- Where the Council or authority is able to present to the Board a Best Practice Operating Procedure (BPOP) in relation to the WAA; and
- The person proposing to undertake the activity has obtained written approval from the Board to undertake the activity or activities in accordance with the BPOPs; and
- The activity is undertaken in accordance with the BPOPs

Further information on the development of a BPOP will be available on the Northern and Yorke board website.

2.1.7 Current Recommended Practice

A Current Recommended Practice (CRP) sets out what the Board considers to be the most appropriate approach, methodology and/or design for undertaking particular water affecting activities. In addition, a CRP may further clarify the standards required to discharge the specific duty pursuant to section 110 of the Act.

In some instances, a CRP may negate the requirement for a WAA permit. The Board requires to be notified prior to the commencement of an activity undertaken in accordance with a CRP in such cases. A list of approved CRPs may be published on the Northern and Yorke board website.

2.1.8 Undertaken as part of an Board-endorsed work plan

An exemption from requiring a WAA permit will be provided for some activities where the Northern and Yorke Board has a contract with an applicant/financial deed pursuant to section 27 or 96 of the Act that specifies that there is an exclusion from requiring a WAA permit, for a specific work plan. All Board-endorsed work plans will follow any relevant Current Recommended Practice for that WAA activity.

Section 2.2 Water-affecting activity permit policies for zone NY1

This part should be read in conjunction with part 2.1.

Table 2.1 lists the activities excluded from requiring a permit, and the relevant authority.

For the purpose of table 2.1, and the general objectives and principles as well as the specific principles for each water affecting activity, the priority water resources are defined as follows:

- a. Priority underground water areas – Carribe basin, Willochra basin, Walloway basin, Para-Wurlie basin, Balaklava, Baroota, Bundaleer, Booborowie and Upper Rocky are defined in Map 1;
- b. Priority surface-water catchments – Willochra, Wakefield and Broughton catchments, the eight identified catchments of the Mambray coast, including the Baroota catchment, and the catchment of the Light River, excluding the sub-catchments of the Mid and Lower Light River are defined in Map 2;
- c. Priority Watercourses are defined in Map 3; and
- d. Baroota underground water management area - defined in Map 4.

ACT REFERENCE	WAA REFERENCE	WATER AFFECTING ACTIVITIES	EXAMPLES	ACTIVITIES NOT REQUIRING A PERMIT	RELEVANT AUTHORITY
104(3)(a)	4	Drilling plugging backfilling or sealing a well.	Well drilling or closure	None	Minister
104(3)(b)	4	Repairing replacing or altering the casing, lining screening of a well.	Well maintenance	None	Minister
104(3)(c)	5	Draining or discharging water directly or indirectly into a well.	Aquifer storage	None	Minister
104(5)(i)	12	Using water in the course of carrying on a business in an NRM region at a volume that exceeds 1 megalitre of water that has been brought into the region by means of a pipe or other channel.		All activities that use water brought into the region by means of a pipe or other channel, except where the water is used on land for irrigation purposes (principle 1).	Minister
104(3)(d)	6	The erection, construction, modification, enlargement or removal of a dam, wall or other structure that will	Dam, wall or other structure Piping a watercourse Sheeted catchment	Desilting of dams in accordance with principle 14 Activity to be undertaken in areas that are not priority surface water areas as	Board

		<p>collect or divert, or collects or diverts: Water flowing in a prescribed watercourse; Water flowing in a watercourse in the Mount Lofty Ranges Watershed that is not prescribed; or Surface water flowing over land in a surface water prescribed area or in the Mount Lofty Ranges Watershed.</p>	<p>Channelling a watercourse</p>	<p>shown on Map 2 Turkey nest dams</p>	
104(4)(a)	6	<p>The erection, construction, modification, enlargement or removal of a dam, wall or other structure that will collect or divert, or collects or diverts, water flowing in a watercourse that is not in the Mount Lofty Ranges Watershed and that is not prescribed or flowing over any other land that is not in a surface water prescribed area or in the Mount Lofty Ranges Watershed.</p>	<p>Dam, wall or other structure Sheeted catchment Piping a watercourse Channelling a watercourse</p>	<p>Desilting of dams in accordance with principle 14. Activity to be undertaken in areas that are not priority surface water areas as shown on Map 2 Turkey nest dams</p>	Board
104(4)(b)	7	<p>The erection, construction or placement of any building or structure in a watercourse or lake or on the floodplain of a watercourse.</p>	<p>Buildings or structures Pump house Culvert Crossing point Fencing</p>	<p>Activity that is proposed to be undertaken at a distance of 40 metres or more from the banks of the nearest watercourse and that does not involve any structure associated with the extraction of water (principle 9). Activity that is proposed to be undertaken on any watercourse or drainage line not delineated on Map 3 (principle 8).</p>	Board

104(4)(c)	8	Draining or discharging water directly or indirectly into a watercourse or lake.	Stormwater from buildings Pipes Culverts Side entry pits	<p>Emergency repairs to a culvert, causeway, floodways or crossings (principle 10).</p> <p>Activity that is proposed to be undertaken on any watercourse or drainage line not delineated on Map 3 (principle 9). Draining or discharging rainwater collected from a structure or building provided: rainwater was transported via closed pipe system, and is equipped with a mechanism to divert the first flush of rainwater away from the watercourse or lake; and point of drainage into a watercourse or lake has measures to prevent erosion (principle 10).</p>	Board
104(4)(d)	9	Depositing or placing an object or solid material in a watercourse or lake or obstructing a watercourse or lake in any other manner.	Island in on-stream dam Rip raps Rocks Snags	<p>Activity that involves a non-polluting object or solid material that occupies less than 5% of the cross section of a watercourse (principle 7).</p> <p>Activity that is proposed to be undertaken on any watercourse or drainage line not delineated on Map 3 (principle 7).</p>	Board
104(4)(f)	9	Depositing or placing an object or solid material on the floodplain of a watercourse or near the bank or shore of a lake to control flooding from the watercourse or lake.	Levee Banks Depositing fill	An activity that is proposed to be undertaken on the floodplain of a watercourse to control flooding from the watercourse or lake is on a watercourse not delineated as a priority watercourse on Map 3	Board

104(4)(g)	10	Destroying vegetation growing in a watercourse or lake or growing on the floodplain of a watercourse.	Removal or destruction of trees, shrubs, grasses	(principle 7). Emergency repairs to a levee bank (principle 7). Activity that is proposed to be undertaken a distance of 40 metres or more from the banks of the nearest watercourse (principle 2). Activity that is proposed to be undertaken on any watercourse or drainage line not delineated on Map 3 (principle 2). Destroying vegetation growing in a watercourse, lake or floodplain of a watercourse, if the activity is for the purpose of controlling a declared pest plant, or in accordance with a consent granted under the Native Vegetation Act 1991 (principle 2).	Board
104(4)(h)	12	Excavating or removing rock, sand or soil from: A watercourse or lake or the floodplain of a watercourse; or An area near to the banks of a lake so as to damage, or create the likelihood of damage to, the banks of the lake.	Desilting on-stream dam Desilting wetlands, swamps and springs Realignment or alteration of a watercourse	Activity that is proposed to be undertaken a distance of 40 metres or more from the banks of the nearest watercourse (principle 5). Desilting of dams in a watercourse or in the floodplain of a watercourse providing it involves the removal of unconsolidated material deposited since construction of the dam or material deposited since the dam was previously desilted (principle 3). Desilting of turkey nest dams (principle 4). Activity that is proposed to be undertaken on any watercourse or drainage line not	Board

				delineated on Map 3 (principle 5). Activity that involves the removal of less than 2 cubic metres of material in any 5 year period (principle 5).	
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2.2.1 General Objectives and Principles

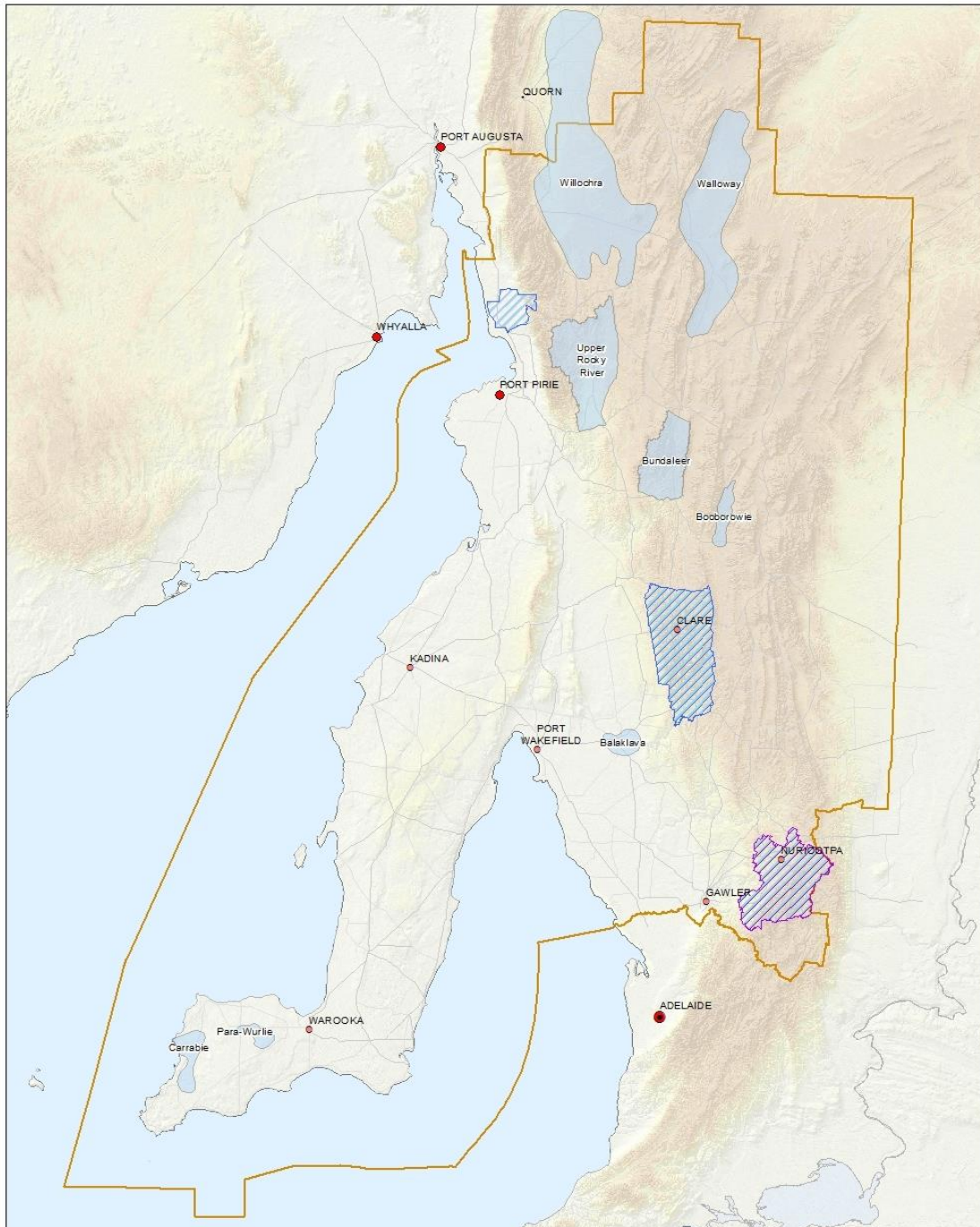
Objectives




1. To ensure water resources are developed and utilised in a sustainable and equitable manner to optimise productive use, while providing for the needs of natural ecosystems.
2. Apply a risk based approach to regulate water affecting activities via a permitting system for the purpose of avoiding unacceptable impacts to water resources, water users and water dependent ecosystems.

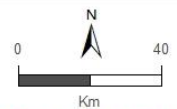
Principles

1. A permit for a water affecting activity will only be granted if the applicant satisfactorily assesses and provides a plan to control any potential risk, including but not limited to:
 - a. risk of impacting the quantity, quality or condition of water resource;
 - b. risk of impacting a person's lawful take of water;
 - c. risk of impacting a water dependent ecosystem or the environmental water requirements of a water dependent ecosystem;
 - d. risk of disturbing a site of Aboriginal cultural significance or impacting cultural activities of traditional owners
 - e. risk of damaging property or infrastructure;
 - f. risk of causing scouring and/or erosion of soils and watercourses;
 - g. risk of impacting native vegetation;
 - h. risk of causing flooding;
 - i. risk of compromising the productive capacity of the land including causing waterlogging, dryland salinity or rising water tables;
 - j. risk of exposing or mobilising acid sulphate soils;
 - k. risk of impacting the migration of native fish or aquatic biota;
 - l. risk of interfering with surface water and underground water interactions; m. compromise the integrity of authorised scientific monitoring or research.
2. Activities shall be designed and located to account for the geomorphic (landscape) characteristics of a watercourse or lake.
3. Activities shall not:
 - a. Be located in ecologically sensitive areas;
 - b. Detrimentially affect ecological diversity and habitats;
 - c. Excessively alter the frequency, duration or magnitude of important flow bands; or
 - d. Alter the direction, magnitude or seasonality of surface and underground water interactions.

Map 1: Priority Underground Water Areas

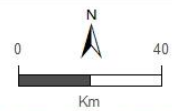
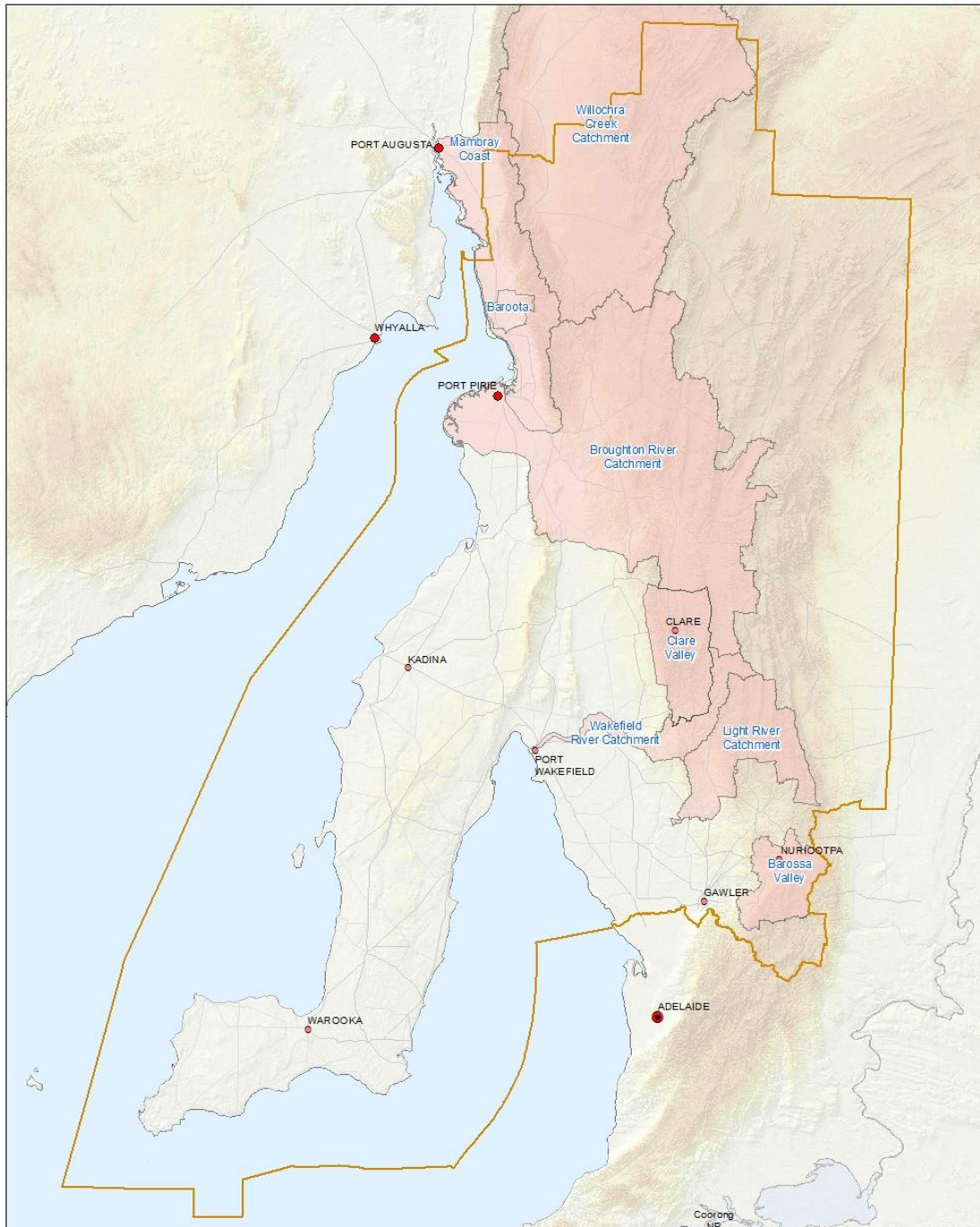


-  Baroota Prescribed Water Resources Area
-  Barossa Valley PWA
-  Clare Valley PWA
-  Priority Groundwater Areas NY



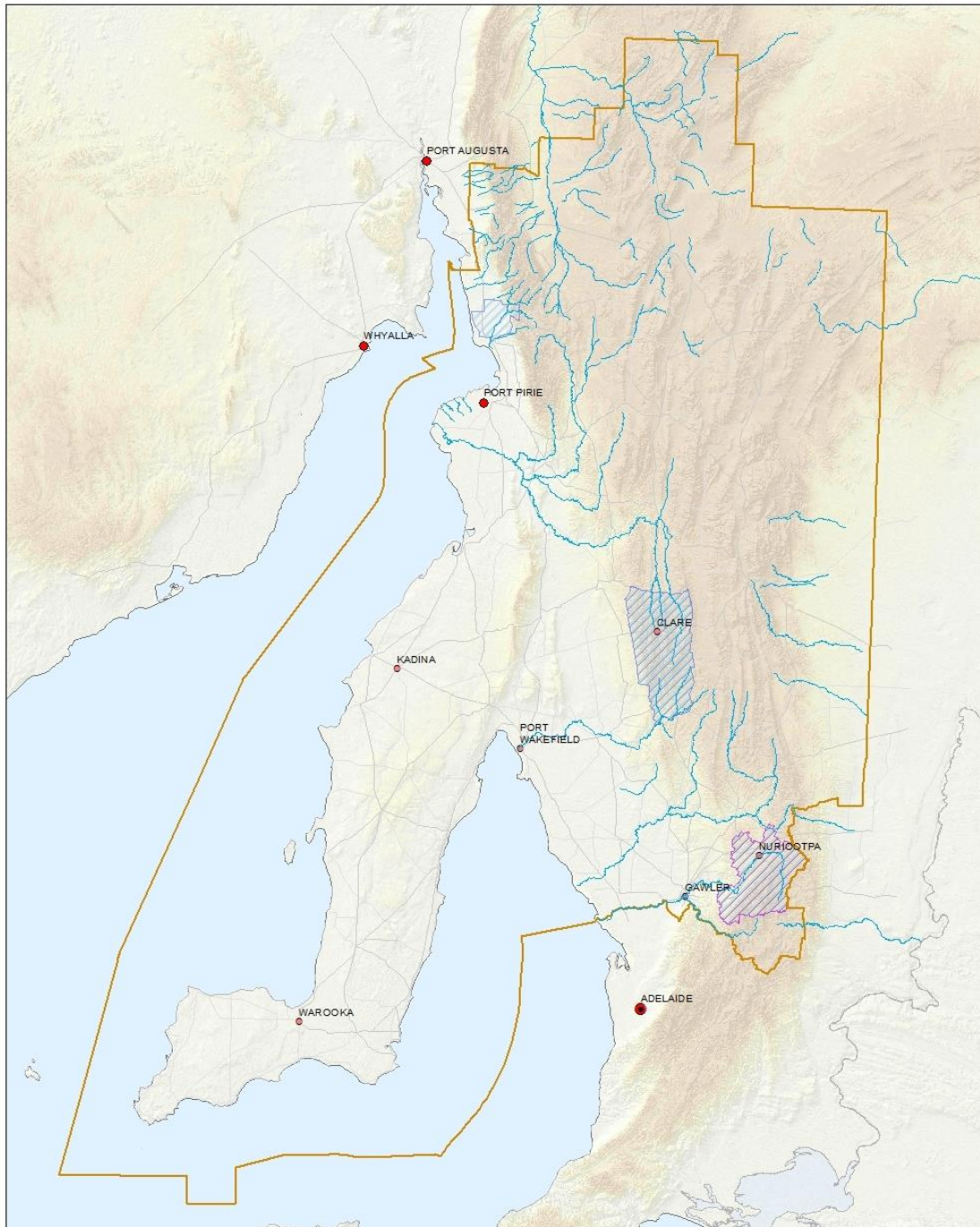
LANDSCAPE
SOUTH AUSTRALIA
NORTHERN AND YORKE




Map 2: Priority Surface Water Areas

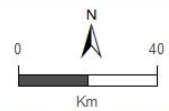


NAYI LANDSCAPE
SOUTH AUSTRALIA
NORTHERN AND YORKE

Map 3: Priority Watercourses

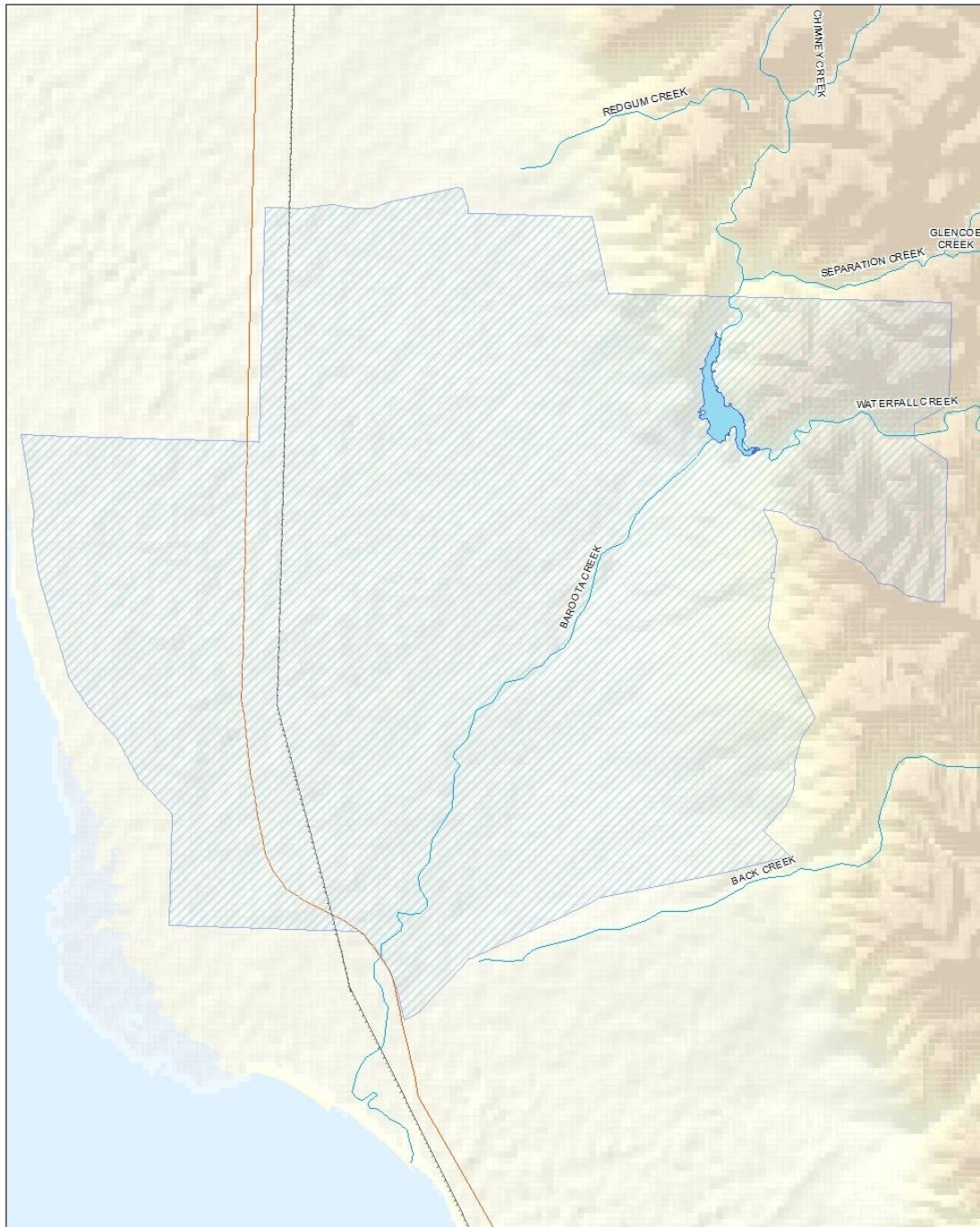


-  Baroota Prescribed Water Resources Area
-  Barossa Valley PWA
-  Clare Valley PWA

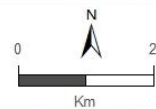


WAVI LANDSCAPE
SOUTH AUSTRALIA
NORTHERN AND YORKE

Map 4: Baroota Underground Water Management Area



- Baroota Reservoir
- Baroota Prescribed Water Resources Area
- Principal Road
- Railway



NAYI LANDSCAPE
SOUTH AUSTRALIA
 NORTHERN AND YORKE

2.2.2 Constructing, backfilling or repairing wells—section 104(3)(a) and (b)

A permit is required for the drilling, plugging, backfilling or sealing of a well and the repairing, replacing or altering the casing, lining or screen of a well, pursuant to Section 104(3)(a) and (b) of the Act.

The following principles shall be considered by the Minister when determining whether to grant or refuse a permit for an activity under these sections of the *Landscape Act 2019*.

PRINCIPLES

Well location

1. Permits for new wells other than replacement wells will not be granted in the priority underground water basins and priority underground water areas shown on Map 1 unless it can be shown that the purpose of the well is for stock (other than stock subject to intensive farming) or domestic extraction.
2. Where an existing operational well needs to be replaced the applicant needs to;
 - a. obtain a permit under the *Landscape Act 2019* to backfill the existing well and demonstrate that an appropriately licensed well driller has or is to decommission the existing well; and
 - b. apply for a permit under the *Landscape Act 2019* to drill a new well, and the applicant is required to agree to construct the replacement well within 50 meters of the original well and within the same aquifer.
3. A permit application to convert an existing well that previously did not take underground water to a well that takes underground water, will be assessed as a new well and is subject to the principles contained in this section, and the applicant is required to:
 - a. demonstrate that they are the asset owner of the existing well, or have permission in writing from the asset owner to use the well; and
 - b. write to the Minister or his delegate about changing the purpose of the well, and obtain permission to change the purpose of the well.
4. Drilling of a well for domestic use and/or for watering stock other than intensively farmed stock shall only occur if the location of that well is:
 - a. At least 200 metres from the nearest existing well that has supplied water for irrigation, stock, domestic or commercial use in the last 10 years; or 100 metres from the nearest existing well that has supplied water for irrigation, stock, domestic or in the last 10 years if the proponent's property is too small to enable a minimum distance of 200 metres between wells and the well is purely for domestic use; and
 - b. At least 500 metres from a pipeline supplying reticulated water under the *Water Industry Act 2012* if the land between the proposed well and the pipeline is owned by the proponent or the proponent has legal access to this land.
5. Despite principle 1, drilling of a well for the purpose of supplying water other than for domestic purposes or watering stock (other than stock subject to intensive farming) can occur in the Baroota Underground water Management Area, delineated on Map 4, if the location of that well lies outside an area of 500 metres radius around each neighbouring existing well, and lies outside the area bounded by the blue line on Map 4 for the buffer zone.
6. For the purposes of principles 5, a neighbouring existing well is defined as a well that has supplied water for irrigation, stock, domestic or commercial use in the last 10 years and is owned by another party.

7. The siting of stock (non-intensive) or domestic wells must have no detrimental effect on any other operational well, permanent or semi-permanent pool, lake, wetland, spring, or permanent or semipermanent flowing stream.
8. The Minister may impose conditions in relation to the construction or operation of a well for the purpose of supplying water other than for domestic purposes or watering stock (other than stock subject to intensive farming) to avoid an unacceptable risk to any other operational well, permanent or semi-permanent pool, lake, wetland, spring, or permanent or semipermanent flowing stream, including the following conditions:
 - a. The extraction must be controlled so that it only takes place in accordance with the specified parameter(s) relating to:
 - (i) Minimum water levels in the well; and/or
 - (ii) Water salinity
 - b. The applicant to install and maintain a meter in accordance with the South Australian Water Use Meter Specifications and provide regular meter readings
 - c. Any other matter deemed relevant by the Minister.

Well construction

9. The equipment, materials and methods used in drilling, plugging, backfilling or sealing of a well, or the replacement or alteration of the casing, lining or screen of a well, shall not adversely affect the quality of a underground water resource.
10. Aquifers shall be protected during drilling, plugging, backfilling or sealing of a well, or the replacement or alteration of the casing, lining or screen of a well, to prevent adverse impacts upon the integrity of the aquifer.
11. A well must not be drilled within 300 metres of a well ('the existing well') into which water is drained or discharged pursuant to a permit granted under Section 104 (3) (c) of the Act for the purpose of aquifer storage and recharge, unless:
 - a. The aquifer into which the proposed well will be drilled is not directly hydraulically connected with the existing well; or
 - b. The proposed well is part of an ASR scheme that includes the existing well.
12. Wells for the purpose of aquifer recharge operations must be constructed so that the headworks allow both recharge and discharge operations to be metered without interference.
13. For the purposes of principle 12, "ASR scheme" means a scheme for the drainage or discharge of water ('recharged water') to an aquifer by one or more persons using one or more wells and the recovery of the recharged water (or other water in lieu of the recharged water) from the aquifer by the same or other persons using the same or other wells.
14. Where a well passes or will pass through two or more aquifers, an impervious seal shall be made and maintained between the aquifers to prevent leakage between the aquifers.
15. The headworks of a well from which water is to be taken, other than for domestic purposes or watering stock (other than stock subject to intensive farming), must be constructed so that the extraction of water from the well can be metered without interference.
16. The headworks for the drainage or discharge of water shall be constructed so that the water cannot leak if the well becomes clogged.
17. For the purposes of this WAA Control Policy, the term 'headworks' means any assembly on top of a well and located between the well casing and the water delivery system.

18. Wells constructed for the drainage or discharge of water at pressures greater than gravity shall be pressure cemented along the full length of the casing.

Well maintenance

19. Deepening of a well or repairing, replacing or altering the casing, lining or screen of a well must only occur where:
 - a. The equipment, materials and method used in the drilling, plugging, backfilling or sealing of a well do not adversely affect the quality of the underground water resource; and
 - b. The aquifers are protected during the repair, replacement or alteration of the casing, lining or screen of a well to avoid contamination of the underground water resource and prevent adverse impacts upon the integrity of the aquifer.

Plugging, backfilling or sealing of a well

20. Wells that are no longer operational or new wells that are not proposed to be operational shall be back filled in an appropriate manner.
21. The plugging, backfilling or sealing of a well must only occur where the equipment, materials and method used in the plugging, backfilling or sealing do not adversely affect the quality of the underground water resource.

2.2.3 Drainage or discharging water into a well—section 104(3)(c)

A permit is required for the draining or discharging of water directly or indirectly into a well pursuant to Section 104(3)(c) of the Act. Additional authorisations may be required under the Environmental Protection Act 1993.

The following principles shall be considered by the Minister when determining whether to grant or refuse a permit for an activity under sections 104(3)(c) of the Act.

PRINCIPLES

1. A permit is required for the draining or discharging of water directly or indirectly into a well, pursuant to Section 104(3)(c) of the Act. Additional authorisations may be required under the *Environmental Protection Act 1993*.
2. A permit to drain or discharge water into a well will not be issued unless a risk assessment is undertaken to the satisfaction of the Minister. This risk assessment must be consistent with the National Water Quality Management Strategy – Australian Guidelines for Water Recycling: Managing Health & Environmental Risks, Phase 1 2006 and other related documents current at the time, and include:
 - a. An investigation into the suitability of the draining or discharging site, including but not limited to tests for transmissivity, maximum injection pressures and calculated likely impacts on the integrity of the well and confining layers, and impacts of potentiometric head changes to other underground water users.
 - b. An appropriate operation or management plan demonstrating that operational procedures and monitoring regime are in place to protect the integrity of the aquifer, minimise the wastage of water and protect the discharge site on an ongoing basis.
 - c. A water quality assessment which identifies hazards in the source water.
 - d. A report on the consequences and impacts to the native underground water resource where the water quality characteristics (salinity and chemistry composition) of the water to be discharge differs to that of the native underground water

3. The water quality assessment required in 2(c) above will include assessments of (but not limited to):
 - a. pH, total dissolved solvents, turbidity, ammonia, nitrate, nitrite, total phosphorus, sodium, chloride, sulphate, calcium, magnesium, bicarbonate, iron, total arsenic, total boron, total cadmium, total chromium, total lead, total manganese, total zinc; and
 - b. Pesticides, volatile organic compounds and petroleum hydrocarbons; and
 - c. Trihalomethanes where the water to be drained or discharged has been treated by chlorination.
4. Water that is drained or discharged into a well only by means of gravity is exempt from meeting the requirements of principle 2(a).
5. Roof runoff (surface water) that is drained or discharged into a well via a closed system of capture and transport is exempt from meeting the requirements of principles 2(a), (c) and (d), provided that the system is equipped with a mechanism to divert first flush water.
6. Further to principle 2(b), continuation of draining and discharge is dependent on an annual report that addresses the impacts to the native underground water at the draining or discharge site. Roof run-off (surface water) captured in a closed system and then drained or discharged into a well is exempt from this principle.
7. For the purposes of principles 1 and 2, the relevant concentrations, levels or amounts shall be measured in sufficient representative samples of:
 - a. the water to be drained or discharged; and
 - b. native underground water collected from the proposed point of injection, or as near as possible to the proposed point of injection; where “sufficient representative samples” means suitable samples, collected with equipment appropriate for the substance, material or characteristic to be measured and taken at suitable locations and times to accurately represent the quality of the relevant water.
8. For the purposes of this WAA Control Policy, the term “native underground water” means water occurring naturally below ground level that exists in the relevant aquifer absent of any such water drained or discharged to that aquifer by artificial means.
9. The draining or discharging of water directly or indirectly into a well must not detrimentally affect the ability of other persons to lawfully take from that underground water, or degrade ecosystems dependent on the underground water.

2.2.4 Water diversion and collection—sections 104(3)(d) and 104(5)(a)

A permit is required, pursuant to Section 104(3)(d) of the Act, for the erection, construction, modification, enlargement or removal of a dam, wall or other structure that will collect or divert for any purpose:

(i) Water flowing in a prescribed watercourse; or

(ii) Surface water flowing over land in a surface water prescribed area, (except for roof runoff exempted by the Notice of Authorisation to Take Water dated 9 March 2006), or in the Mount Lofty Ranges Watershed.

A permit is required, pursuant to Section 104(5)(a) for the erection, construction, modification, enlargement or removal of a dam, wall or other structure that will collect or divert, or collects or diverts, water flowing in a watercourse that is not in the Mount Lofty Ranges Watershed and that is not prescribed or flowing over any other land that is not in a surface water prescribed area or in the Mount Lofty Ranges Watershed.

The following principles shall be considered by the Board when determining whether to grant or refuse a permit for an activity under section 104(3)(d) and section 104(5)(a) of the Act.

DESIRED OUTCOME

Dams have traditionally been constructed across watercourses and drainage paths to capture water for a variety of purposes, including the provision of stock and domestic water supply, and water for irrigation. There is a need to protect flow patterns and the associated water-dependent ecosystems from the impacts of over extraction.

An on-stream dam typically inhibits all flow until the dam is filled, and once filled water spills over and flows further downstream. On-stream dams exist throughout the region and have been shown to reduce the rate, volume, flow duration and total yield of stream flow. They can also lengthen the period of non-flow within the watercourse.

Although on-stream dams may provide a more reliable water supply for the user, the structure inhibits water flows that are required to sustain water-dependent ecosystems and reduces the opportunity for downstream landholders to access water.

There is little flexibility in the management of 'on-stream' dams as they capture all flow until full, and subject this water to immediate evaporation.

'Off-stream' dams provide greater flexibility, as the mechanism used to extract water from a watercourse can be varied to allow capture of water at different times or flow rates.

PRINCIPLES

1. Principles 2 – 8 in this sub-section apply only to the management of dams in the priority surface water areas shown on Map 2.
2. Subject to principle 4 a permit shall not be granted to erect, construct, modify or enlarge a dam, wall or other structure that will collect or divert water where the total volume captured by the existing dams, walls and other structures and the proposed dam, wall or other structure combined will exceed 25% of the median adjusted annual flow in the relevant catchment as determined by:
 - a. Gauging stations; or
 - b. An assessment using a model approved by the Board.
3. Subject to principle 4, a permit to erect, construct, modify or enlarge a dam shall not be granted where the total volume of water captured on the allotment on which the dam is proposed to be erected, constructed, modified or enlarged would exceed a figure calculated by 25% of the median adjusted annual flow calculated for the total catchment divided by the total catchment area (ML/ha), multiplied by the allotment area (ha).
4. A permit for the construction of a new dam or enlargement of an existing dam may be granted where there has been an equivalent prior reduction in dam capacity and a significant environmental benefit can be demonstrated, e.g. rationalisation of existing dams or significant evaporation reduction.
5. Watercourse water may only be diverted to or collected in a dam where the area of the catchment that contributes runoff to the watercourse is less than 300 hectares.
6. Dams for stock or domestic purposes may only be constructed if there is insufficient or inadequate water available on the property, such that:
 - a. There is no capacity to connect to SA Water supply; and
 - b. The flow rate of water from wells is less than 0.1 litre/sec; or
 - c. The salinity of the water from the wells is greater than: 1,500 mg/L for general domestic purposes; 1,000 mg/L if the water is used for drinking purposes; or 3,000 mg/L for stock purposes.

7. Despite principles 2-3, a permit may be granted to erect or construct a dam, wall or other structure for the purpose of erosion control or flood mitigation, provided that the dam is fitted with a controlled flow release device.
8. For the purposes of principle 7, a controlled flow release device shall consist of a pipe with a minimum diameter of 50 millimetres and of sufficient size and sited to drain the dam to practical limits/to a level equivalent to that of the land immediately downstream in no more than 48 hours after filling.
9. A dam, wall or other structure must not:
 - a. Cause increased salinity due to leakage;
 - b. Contribute to dryland salinity or intrusions of saline underground water into watercourses;
 - c. Be located in ecologically sensitive areas;
 - d. Adversely affect the migration of aquatic biota;
 - e. Be constructed of material that cannot maintain the structural integrity of the bank; and
 - f. Be located in an area where the material on the floor of the dam is permeable, unless the dam is lined with a suitable material or is for the purpose of erosion control or flood mitigation
10. A dam, wall or other structure must not adversely affect downstream users, including water-dependent ecosystems, by causing reduced stream flow duration, lengthened periods of no or low flow, or other such impacts.
11. A dam, wall or other structure (including spillways) shall be sited and constructed to:
 - a. Minimise the loss of soil from the site and watercourse through soil erosion; and
 - b. Minimise the removal or destruction of in-stream or riparian vegetation caused by but not limited to erosion and siltation.
12. The design, construction and maintenance of a dam should not result in watercourse erosion.
13. Constructing or enlarging a contour bank does not require a permit provided the activity is in accordance with section 106(1)(b) of the Act. Guidelines for constructing or enlarging a contour bank can be obtained from the Board.
14. A permit is not required to desilt a dam provided:
 - a. the activity only removes material deposited post dam construction or material deposited since the dam was previously desilted;
 - b. the material removed shall not be deposited within a watercourse, lake or floodplain of a watercourse; and
 - c. the volume of the dam is not increased beyond its original size.

2.2.5 Building or structure in a watercourse, lake or floodplain—section 104(4)(b)

A permit is required for the erection, construction or placement of any building or structure in a watercourse or lake or on the floodplain of a watercourse pursuant to Section 104 (4)(b) of the Act.

The following principles shall be considered by the Board when determining whether to grant or refuse a permit for an activity under section 104(4)(b) of the Act.

PRINCIPLES

1. The erection, construction or placement of any building or structure in a watercourse or lake or on the floodplain of a watercourse shall be designed to minimise the risk of erosion resulting from the construction and location of the structure, and shall maintain natural drainage lines.
2. The erection, construction or placement of any building or structure in a watercourse or lake or on the floodplains of a watercourse must not adversely affect the provision of environmental water requirements of those areas, including exacerbation of salinity.
3. Buildings or structures that impede the flow of water, including but not limited to weirs, must be designed to provide a low flow bypass mechanism, excluding those structures for the specific purpose of measuring stream flow.
4. Buildings and structures shall be maintained in an appropriate condition to perform their intended function.
5. Provision should be made to retain open spaces along watercourses. Therefore, a one-in-100-year flood level shall be taken into account when assessing for permits under this Section.
6. The design, construction and location of a building or structure must not:
 - a. Result in watercourse, lake or floodplain erosion;
 - b. Adversely affect the migration of aquatic biota; or
 - c. Alter the hydrology of a stream in such a way as to adversely impact on the ecology of the watercourse.
7. Constructing or enlarging a contour bank does not require a permit provided the activity is in accordance with section 106(1)(b) of the Act. Guidelines for constructing or enlarging a contour bank can be obtained from the Board.
8. Construction of any building or structure in a watercourse, lake or on the floodplain of a watercourse or drainage line not delineated on Map 3 does not require a permit.
9. Construction of any building or structure at a distance of 40 metres or more from the banks of the nearest watercourse and that does not involve any structure associated with the extraction of water does not require a permit.
10. Emergency repairs to a culvert, floodways or crossings shall be notified to the Board but do not require a permit.

2.2.6 Drainage or discharge of water into a watercourse or lake—section 104(4)(c)

A permit is required for the draining or discharging of water directly or indirectly into a watercourse or lake, pursuant to Section 104(4)(c) of the Act.

The following principles shall be considered by the Board when determining whether to grant or refuse a permit for an activity under section 104(4)(c) of the Act.

PRINCIPLES

1. The draining and discharge of water into a watercourse must not:
 - a. Adversely affect the natural character of the watercourse; or
 - b. Increase the risk of flooding downstream of the point where water is drained or discharged.

2. Water may only be drained or discharged into a watercourse or lake where protective measures have been provided to minimise erosion or degradation in the quality of the receiving water.
1. For the purpose of principle 2, protective measures include, but are not limited to the following:
 - a. Detention basins to regulate the rate, volume and quality of water discharged;
 - b. Reuse of drainage or discharge water under conditions that would not present a risk to public or environmental health;
 - c. Litter traps;
 - d. Treating the water to be drained or discharged into the watercourse or lake;
 - e. Draining or discharging water into a watercourse at times of naturally high flow.
2. Any structures or measures to minimise erosion or degradation in the quality of the receiving water for the purposes of principle 3 must be managed to ensure they continue to function according to their design.
3. Detention basins shall be designed and constructed to allow sediments to settle before water in the basin is drained or discharged into a watercourse or lake.
4. Draining or discharge of water into a watercourse or lake shall not adversely affect the migration of aquatic biota.
5. Watercourses shall be retained in their natural state to promote natural filtering and pollutant-removal processes.
6. Impacts of stormwater pollutants shall be minimised by planting indigenous plant species along watercourses and replacing exotic plants that contribute to stormwater pollution with indigenous species.
7. Draining or discharging water directly or indirectly into a watercourse or drainage line not delineated on Map 3 does not require a permit.
8. Draining or discharging rainwater collected from a structure or building does not require a permit provided:
 - a. rainwater was transported via closed pipe system, and is equipped with a mechanism to divert the first flush of rainwater away from the watercourse or lake; and
 - b. point of drainage into a watercourse or lake has measures to prevent erosion.

2.2.7 Management of obstructions—sections 104(4)(d), (e) and (f)

A permit is required for depositing or placing an object or solid material in a watercourse or lake, pursuant to Section 104(4)(d) of the Act.

A permit is required for depositing or placing an object or solid material on the floodplain of a watercourse or near the bank or shore of a lake to control flooding from the watercourse or lake, pursuant to Section 104(4)(f) of the Act. A permit is required for obstructing a watercourse or lake in any other manner pursuant to Section 104(4)(e) of the Act.

The following principles shall be considered by the Board when determining whether to grant or refuse a permit for an activity under section 104(4)(d), (e) and (f) of the Act.

PRINCIPLES

1. A permit may only be granted to deposit or place an object or solid material in a watercourse or lake where the activity involves:

- a. The construction of an erosion control structure, for example, but not limited to a rock chute or rip rap;
 - b. An authorised device or structure used to extract or regulate water flowing in a watercourse, for example, but not limited to diversion weirs; or
 - c. An authorised activity for scientific purposes, for example, but not limited to flow-measuring devices.
2. Any object or solid material used in the control or prevention of watercourse erosion shall be designed on a reach basis and shall not cause increased erosion up or down stream of the point where the object or solid material is deposited or placed.
 3. Depositing or placing an object or solid material in a watercourse or lake shall not adversely affect:
 - a. Water-dependent ecosystems;
 - b. The migration of aquatic biota; or
 - c. The natural flow regime.
 4. Depositing or placing an object or solid material in a watercourse or lake shall not cause erosion.
 5. Depositing or placing an object or solid material on the floodplain of a watercourse or near the bank or shore of a lake to control flooding from the watercourse or lake shall not:
 - a. Adversely affect the natural flow of the watercourse;
 - b. Increase the risk of flooding including upstream or downstream of the point where the object or solid material is deposited or placed; or
 - c. Cause or increase erosion in a watercourse or lake
 6. Depositing or placing an object or solid material on the floodplain of a watercourse or near the bank or shore of a lake to control flooding from the watercourse or lake shall:
 - a. Provide for the needs of ecosystem processes (including the migration of aquatic biota), and
 - b. Minimise the impact or risk of flooding on human communities.
 7. A permit is not required under this subsection where:
 - a. The proposed activity involves a non-polluting object or solid material that occupies less than 5 percent of the cross section of a watercourse; or
 - b. Depositing or placing an object or solid material in a watercourse or lake is to be undertaken on a watercourse or drainage line not delineated as a priority watercourse on Map 3.
 - c. Depositing or placing an object or solid material on the floodplain of a watercourse to control flooding from the watercourse or lake is on a watercourse not delineated as a priority watercourse on Map 3.
 - d. Emergency repairs are undertaken to a levee bank and are notified to the Board.

2.2.8 Management of vegetation removal and excavation - section 104(4)(g)

A permit is required for destroying vegetation growing in a watercourse or lake or growing on the floodplain of a watercourse pursuant to Section 104(4)(g) of the Act.

The following principles shall be considered by the Board when determining whether to grant or refuse a permit for an activity under section 104(4)(g) of the Act.

PRINCIPLES

1. Destruction of vegetation shall only occur where it is for the protection of existing development and infrastructure or rehabilitation of a watercourse and does not result in any of the following:
 - a. Increased erosion;
 - b. Increased flooding;
 - c. Bed and bank instability;
 - d. Downstream sedimentation;
 - e. Decline in water quality;
 - f. Alteration to the natural flow regime of a watercourse; or
 - g. Destruction of valuable habitat for native fauna.

Note: Destruction, damage to and removal of native vegetation requires approval under the *South Australian Native Vegetation Act 1991*.

2. A permit is not required under this subsection where:
 - a. The destruction of vegetation growing in a watercourse or lake or growing on the floodplain of a watercourse is undertaken a distance of 40 metres or more from the banks of the nearest watercourse;
 - b. Activity that is proposed to be undertaken on any watercourse or drainage line not delineated on Map 3. Vegetation growing in a watercourse, lake or floodplain of a watercourse, is destroyed where the activity is for the purpose of controlling a declared pest plant, or in accordance with a consent granted under the Native Vegetation Act 1991.

2.2.9 Management of excavation - sections 104(4) (h)

A permit is required for excavating or removing rock, sand or soil from:

(i) A watercourse or lake or the floodplain of a watercourse; or

(ii) An area near to the banks of a lake so as to damage, or create the likelihood of damage to, the banks of the lake, pursuant to Section 104(4)(h) of the Act.

The following principles shall be considered by the Board when determining whether to grant or refuse a permit for an activity under section 104(4)(h) of the Act.

PRINCIPLES

1. Alteration to the alignment of a watercourse shall only occur where it is for the protection of existing development and infrastructure or rehabilitation of a watercourse, and the realignment does not result in any of the following:
 - a. Increased erosion;
 - b. Increased flooding;
 - c. Bed and bank instability;
 - d. Downstream sedimentation;
 - e. Loss of riparian vegetation;
 - f. Decline in water quality; or
 - g. Alteration to the natural flow regime of a watercourse.
2. The excavation and removal of rock, sand or soil must not result in erosion of the bed or banks of a watercourse or adversely impact on either:
 - a. The ecology of a watercourse, lake or floodplain;
 - b. Migration of aquatic biota; and
 - c. Increase or decrease the capacity to capture water.
3. Excavation of material (“de-silting”) from a dam to maintain the capacity of the dam shall require a permit, except where that excavation is only of unconsolidated material deposited since the construction of the dam or material deposited since the dam was previously desilted.

4. Excavation of material (“de-silting”) from a “turkey nest” dam is exempted from principle 3.
5. A permit is not required under this subsection where:
 - a. The excavation or removal of rock, sand or soil from a watercourse or the floodplain of a watercourse is undertaken no less than 40 metres from the banks of a watercourse;
 - b. The excavation or removal of rock, sand or soil from a watercourse or the floodplain of a watercourse relates to a watercourse not delineated as a priority watercourse on Map 3; or
 - c. Involves the removal of less than 2 cubic metres of material in any 5 year period.

2.2.10 Use of imported water section 104(4)(i)

A permit is required to use imported water in the course of carrying on a business pursuant to Section 104(4)(i) of the Act.

The following principles shall be considered by the Minister when determining whether to grant or refuse a permit for an activity under section 104(4)(i) of the Act.

PRINCIPLES

1. A permit for the use of imported water is required where:
 - a. The water is used at a rate that exceeds 1 ML/water use year, where the rate is based on the total volume of imported water used on contiguous land parcels owned or leased by the applicant; and
 - b. The imported water is applied to land for irrigation purposes, either directly or following use in another process (e.g. in a winery process or intensive animal production).
2. A permit should not be granted unless the relevant authority is satisfied that the use of the imported water will not:
 - a. Cause, or be likely to cause, a rise in the underground water level resulting in detrimental effects to structures or ecosystems; or
 - b. Result, or be likely to result, in adverse effects on the natural flow or quality of another water resource; or
 - c. Result, or be likely to result, in adverse effects to the productive capacity of the land including but not limited to, increases in land salinisation, waterlogging, or perched water tables; or
 - d. Adversely affect water dependent ecosystems.
3. The total volume of water that the permit applicant will be authorised under the Act to apply to the relevant land should not exceed 1 megalitre per hectare of the relevant land per annum (where the relevant land is the aggregate of all contiguous land parcels owned or leased by the applicant), unless the relevant authority is satisfied that the application of more than 1 megalitre of water per hectare in any specified area of the land will not result in any of the adverse effects referred to in principle 2.
4. Imported water containing residual chlorine or other treatment chemicals must not be discharged into surface water or watercourses or on land adjacent to surface water or watercourses.
5. Imported water must not be transported in a watercourse or along a drainage path.

6. If imported water is to be stored, the storage facilities must be constructed and operated in a manner that prevents any detrimental impact on the quality of underground water or the health of water dependent ecosystems.
7. If imported water is to be stored in a dam, the dam must have no natural catchment (in order to prevent imported water entering the environment) unless either the proponent can demonstrate to the satisfaction of the relevant authority that the dam is constructed in such a way as to prevent any unauthorised discharge of imported water to the environment.
8. A permit for use of imported water must specify a maximum volume for use per water use year irrespective of the method of use, the type of crops irrigated, frequency of irrigation or any other factor.
9. A permit for the use of imported water should be granted for a fixed period and will expire on the date specified on the permit.

2.2.11 Glossary

Allotment: the section, lots, or allotment identified on a certificate of title under the *Real Property Act 1886*; and includes two or more contiguous allotments owned or occupied by the same person and operated as a single unit for the purpose of primary production.

Applicant: a person or incorporated body who puts forward an application for water affecting activity permit or water management authorization.

Aquifer: a permeable volume of rock or sediment in which underground water is stored.

Aquatic biota: all organisms that live in water at a particular locality.

Board: means a board established under Division 2 (13) of the Act.

Catchment: is an area of land where water drains to a downstream point.

Catchment area: is the measured area of the upstream catchment.

Channel: as defined in the Act and includes a drain, gutter or pipe; or part of a channel.

Construct: as defined in the Act and includes erect, alter, reduce, enlarge, repair or excavate.

Contaminants: include, but are not limited to, nutrients, sediments and chemicals.

Cultural significance: for the purposes of the water affecting activity policy, may include a site or physical item that has cultural significance to the tradition or existence of an Aboriginal person or group.

Dam: an excavation, barrier or other structure that collects and stores water; and the dam includes directly connected components and infrastructure such as but not limited to: the embankment, spillway, outlet, valves, inlet pipe and pump, or inlet channel.

Desilting: is the removal of material that has deposited post construction of a dam, channel or drain.

Diversion: see 'take' definition

Domestic extraction/use: as defined in the Act and means in relation to the taking of water does not include:

- a. taking water for the purpose of watering or irrigating land, other than land used solely in connection with a dwelling; or

- b. without limiting paragraph (a)—taking water for the purpose of watering or irrigating more than 0.4 of a hectare of land; or
- c. taking water to be used in carrying on a business (except for the personal use of persons employed in the business).

Drain: see channel definition

Drainage path: the path that surface water naturally flows along over land.

Drill: as defined in the Act and in relation to a well means to drill the well or to excavate the well in any other manner and includes to deepen or widen an existing well

Dryland salinity: the process whereby salts stored below the surface of the ground are brought close to the surface by a rising water table, and the accumulation of salt in the upper soil profile impacts agricultural land, infrastructure and the environment.

Ecosystem: as defined in the Act and means a dynamic complex of plant, animal, fungal and microorganism communities and the associated non-living environment interacting as a functional unit.

Environmental Water Requirements: as defined in the Act and means those water requirements that shall be met in order to sustain the environmental values of ecosystems that depend on the water resource, including their processes and biodiversity, at a low level of risk.

Floodplain: as defined in the Act and means any area of land adjacent to a watercourse, lake or estuary that is periodically inundated with water and includes any other area designated as a floodplain by

- a. a regional landscape plan; or
- b. Development Plan under the *Planning Development and Infrastructure Act 2016*.

Habitat: the natural place or type of site in which an animal or plant, or communities of animals and plants, live.

Headworks: an assembly on top of a well that is located between the well casing and the water delivery system.

Infrastructure: as defined in the Act and includes

- a. artificial lakes;
- b. dams or reservoirs;
- c. embankments, walls, channels or other works or earthworks;
- d. bridges and culverts;
- e. buildings or structures;
- f. roads;
- g. pipes, machinery or other plant or equipment;
- h. any device;
- i. any item or thing used in connection with:
 - i. testing, monitoring, protecting, enhancing or re-establishing any natural resource, or any aspect of a natural resource; or
 - ii. any other program or initiative associated with the management of a natural resource.

Land: as defined in the Act and means according to the context, (a) land as a physical entity, including land under water; or (b) any legal estate or interest in, or right in respect of, land; and includes any building or structure fixed to the land.

Lake: as defined in the Act and means a natural lake, pond, lagoon, wetland or spring (whether modified or not) and includes:

- a. part of a lake; or

- b. a body of water designated as a lake by a regional landscape plan or by a Development Plan under the *Planning Development and Infrastructure Act 2016*.

In addition, Section 3(3)(b) of the Act, makes a reference to a lake as a reference to either

- (i) the bed, banks and shores of the lake (as they may exist from time to time); or
- (ii) the water for the time being held by the bed, banks and shores of the lake (as they may exist from time to time), or both, depending on the context.

Licensed well driller: as defined in the Act and means a person who holds a licence under Chapter 7 to drill wells.

Megalitre (ML): one million litres

Metered water use: Water volume measured through a water flow meter.

Minister: the Minister responsible for the administration of the Act.

Native underground water: means water occurring naturally below ground level that exists in the relevant aquifer absent of any such water drained or discharged to that aquifer by artificial means.

Natural resources: as defined in the Act and includes:

- a. soil;
- b. water resources;
- c. geological features and landscapes;
- d. native vegetation, native animals and other native organisms;
- e. ecosystems.

Net planted area: as applied to commercial forests, means the area of the commercial forest measured from stump to stump, less any unplanted areas, areas under clear fell slash or areas consisting of dead plantation trees, greater than 0.1 hectare. Access tracks less than seven meters wide are part of the net planted area.

On-stream dam: a purpose built barrier for collecting and storing the flow of a watercourse or drainage path.

Owner of land: as defined in the Act and means:

- a. if the land is unalienated from the Crown – the Crown;
- b. if the land is alienated from the Crown by grant in fee simple – the owner (at law or in equity) of the estate in fee simple;
- c. if the land is held from the Crown by lease or license – the lessee or licensee, or a person who has entered into an agreement to acquire the interest of the lessee or licensee;
- d. if the land is held from the Crown under an agreement to purchase – the person who has the right to purchase;
- e. a person who holds native title in the land; or
- f. a person who has arrogated to himself or herself (lawfully or unlawfully) the rights of an owner of the land; and includes an occupier of the land and any other person of a prescribed class included within the ambit of this definition (under the Act) by the regulations.

Recharge: recharge is the process whereby underground water is replenished by water draining into the aquifer from rainfall, irrigation infiltration or leakage from a surface water body.

Regional landscape plan means a regional landscape plan prepared by a regional landscape board under Part 4 Division 1 of the Act.

Riparian: the area adjacent to a watercourse or lake that influences and is influenced by hydrological

processes, and includes bed, bank and floodplain of watercourse and lake.

Runoff: water flowing over land or in a natural or man-made drain, after having fallen as precipitation.

South Australian Water Use Meter Specification: is the specification for the installation and operation of water meters in South Australia, which is available at

www.waterconnect.sa.gov.au/Content/Publications/DEWNR/DEWNR_SA%20Licensed%20Water%20Use%20Meter%20Specifications.pdf

Spring: see definition for lake

Stormwater: surface water generated from rainfall falling on a built area

Surface water: as defined in the Act and means

- a. water flowing over land (except in a watercourse) –
 - i. after having fallen as rain or hail or having precipitated in any another manner or,
 - ii. after rising to the surface naturally from underground;
- b. water of the kind referred to in paragraph (a) that has been collected in a dam or reservoir;
- c. water of the kind referred to in paragraph (a) that is contained in any stormwater infrastructure;
- d. water in a watercourse if the watercourse, or a particular part of a watercourse, is declared by proclamation to constitute surface water for the purposes of this Act.

To take: as defined in the Act, and means to take water from a water resource includes:

- a. to take water by pumping or syphoning the water;
- b. to stop, impede or divert the flow of water over land (whether in a watercourse or not) for the purpose of collecting the water;
- c. to stop, impede or direct the flow of water in any stormwater infrastructure for the purpose of collecting the water, or to extract any water from stormwater infrastructure;
- d. to divert the flow of water in a watercourse from the watercourse;
- e. to release water from a lake;
- f. to permit water to flow under natural pressure from a well;
- g. to permit stock to drink from a watercourse, a natural or artificial lake, a dam or reservoir;
- h. to cause, permit or suffer any activity referred to in a preceding paragraph;

Turkey nest dam: a dam with a 360 degree closed wall such that it does not collect surface run-off but is only used to hold water

Unacceptable impact: means an impact as a result of a water affecting activity that causes:

- a. a permanent degradation in the condition or function of a natural resource or water dependent ecosystem;
- b. a reduction in the economic value of land or personal property;
- c. damage to infrastructure that requires repair to continue its function or requires removal to the reduce risk to public safety; or
- d. harms life or jeopardizes the quality of life.

Underground water: as defined in the Act and includes

- a. water occurring naturally below ground level; or
- b. water pumped, diverted or released into a well for storage underground.

Water allocation plan: as defined in the Act and includes a water allocation plan prepared by a regional landscape board under Part 4 Division 2 of the Act.

Watercourse: as defined in the Act and means a river, creek or other natural watercourse (whether modified or not) in which water is contained or flows whether permanently or from time to time and includes:

- a. a dam or reservoir that collects water flowing in a watercourse;
- b. a lake through which water flows;
- c. a channel (but not a channel declared by regulation to be excluded from the ambit of this definition) into which the water of a watercourse has been diverted;
- d. part of a watercourse;
- e. an estuary through which water flows;
- f. any other natural resource, or class of natural resource, designated as a watercourse for the purposes of this Act by a Landscape plan.

In addition, Division 1 (4) of the Act includes a reference to a watercourse is a reference to either
(i) the bed and banks of the watercourse (as they may exist from time to time); or
(ii) the water for the time being within the bed and banks of the watercourse (as they may exist from time to time), or both, depending on the context.

Water dependent ecosystems: those parts of the environment, the species composition and natural ecological processes that are determined by the permanent or temporary presence of flowing or standing water, above or below ground.

Water quality: the physical, chemical and biological characteristics of water.

Water resource: as defined in the Act and means a watercourse or lake, surface water, underground water, stormwater (to the extent that it is not within a preceding item) and effluent.

Water table: the elevation of the surface of underground water surface.

Weir: see definition for 'diversion structure'

Well: as defined in the Act and means

- a. an opening in the ground excavated for the purpose of obtaining access to underground water;
- b. an opening in the ground excavated for some other purpose but that gives access to underground water;
- c. a natural opening in the ground that gives access to underground water.

Wetland: as defined in the Act, and means an area that comprises land that is permanently or periodically inundated with water (whether through a natural or artificial process) where the water may be static or flowing and may range from fresh water to saline water and where the inundation with water influences the biota or ecological processes (whether permanently or from time to time) and includes any other area designated as a wetland by

- a. a regional landscape plan; or
- b. by a Development Plan under the *Planning Development and Infrastructure Act 2016*;

but does not include –

- c. a dam or reservoir that has been constructed by a person wholly or predominantly for the provision of water for primary production or human consumption; or
- d. an area within an estuary or within any part of the sea; or
- e. an area excluded from the ambit of this definition by the regulations.

Part 2.3 Water-affecting activity permit policies for zones NY2 – NY10

This part should be read in conjunction with part 2.1.

The relevant authorities listed below are consistent with the provisions of the Act, and with arrangements that applied prior to the commencement of landscape management boards.

Table 2.3.1: Water affecting activity exclusions and relevant authority

Act definitions of water affecting activities	Examples of WAAs	WAAs excluded from requiring a permit – general exclusions	WAAs excluded from requiring a permit – specific exclusions	Relevant authority
104(3)(a) Drilling, plugging, backfilling or sealing of a well	Well drilling or closure	As specified in the Act	None - all applications assessed on merit	Minister
104(3)(b) Repairing, replacing or altering the casing, lining or screen of a well	Well maintenance or upgrade	As specified in the Act	None - all applications assessed on merit	Minister
104(3)(c) Draining or discharging water directly or indirectly into a well	Managed aquifer recharge	As specified in the Act	None - all applications assessed on merit	Minister
104(3)(d) The erection, construction, modification, enlargement or removal of a dam, wall or other structure that will collect or divert, or collects or diverts— (i) water flowing in a prescribed watercourse; or (ii) water flowing in a watercourse in the Mount Lofty Ranges Watershed that is not prescribed; or (iii) surface water flowing over land in a surface water prescribed area or in the Mount Lofty Ranges Watershed	Dam, wall or other structure; Piping a watercourse; Channelling a watercourse; Stormwater harvesting/treatment wetland	As specified in the Act	Desilting a dam in some circumstances, provided it is carried out consistently with principle 48, and does not involve a WAA pursuant to 104(4)(d)	Board
104(4)(a) The erection, construction, modification, enlargement or removal of a dam, wall or other structure that will collect or divert, or collects or diverts, water flowing in a watercourse that is not in the Mount Lofty Ranges Watershed and that is	Dam, wall or other structure; Piping a watercourse; Channelling a watercourse; Stormwater harvesting/	As specified in the Act	Desilting a dam in some circumstances, provided it is carried out consistently with principle 48, and does not involve a WAA pursuant to 104(4)(d)	Board

Act definitions of water affecting activities	Examples of WAAs	WAAs excluded from requiring a permit – general exclusions	WAAs excluded from requiring a permit – specific exclusions	Relevant authority
not prescribed or flowing over any other land that is not in a surface water prescribed area or in the Mount Lofty Ranges Watershed	treatment wetland			
104(4)(b) The erection, construction or placement of any building or structure in a watercourse or lake or on the floodplain of a watercourse	Buildings or structures <10m ² ; Pump house; Horse shelter; Culvert; Crossing point or bridge; Fencing	As specified in the Act Activity where the proponent has written authorisation to carry out the activity in accordance with Board endorsed Best Practice Operating Procedures (BPOP) addressing the activity	Exclusion for zone NY3: Activity that is proposed to be undertaken beyond the 1-in-100 year average recurrence (ARI) flood level, where flood mapping is available, or a distance of 10 metres or more from the banks of the nearest watercourse where flood mapping is not available	Board
S104(4)(c) Draining or discharging water directly or indirectly into a watercourse or lake	Stormwater from buildings; Pipes; Culverts; Side entry pits	Activity that is undertaken in accordance with a Board endorsed Current Recommended Practice addressing the activity and notification	Exclusion for zone NY3: Activity that involves draining or discharging water of better quality than the receiving waters at a rate not exceeding 1 ML/y	Board
S104(4)(d) Depositing or placing an object or solid material in a watercourse or lake	Island in dam in a watercourse; Riprap; Rocks; Tyres; Snags; Filling a watercourse	has been received by the Board prior to commencement Activity that is undertaken as part of a Board-endorsed work plan that permit for that activity specifies that there is an exclusion from requiring a WAA permit for that activity		Board
S104(4)(e) Obstructing a watercourse or lake in any other manner	Planting vegetation			Board

Act definitions of water affecting activities	Examples of WAAs	WAAs excluded from requiring a permit – general exclusions	WAAs excluded from requiring a permit – specific exclusions	Relevant authority
S104(4)(g) Destroying vegetation growing in a watercourse or lake or growing on the floodplain of a watercourse	Removal or destruction of trees, shrubs, grasses	As specified in the Act Activity where the proponent has written authorisation to carry out the activity in		Board
104(4)(h) Excavating or removing rock, sand or soil from— (i) a watercourse or lake or the floodplain of a watercourse; or (ii) an area near to the banks of a lake so as to damage, or create the likelihood of damage to, the banks of the lake	Desilting dam in a watercourse; Desilting wetlands, swamps and springs; Realignment or alteration of a watercourse; Groundwater access trench (GAT) construction	accordance with Board endorsed Best Practice Operating Procedures (BPOP) addressing the activity Activity that is undertaken in accordance with a Board endorsed Current Recommended Practice addressing the activity and notification has been received by the Board prior to commencement	Desilting a dam in some circumstances, provided it is carried out consistently with principle 48, and does not involve a WAA pursuant to 104(4)(d)	Board
104(4)(i) Using water in the course of carrying on a business in the Hills and Fleurieu landscape management region at a rate that exceeds the rate prescribed by this Policy, if the water has been brought into the region by means of a pipe or other channel	Use of imported water for irrigation; Use of imported water for industrial purposes	Activity that is undertaken as part of a Board endorsed work plan that specifies that there is an exclusion from requiring a WAA	Exclusion for zone NY3: Where imported water is used on the land at a rate of up to 1 ML/ha/y; or up to 1 ML/y for non-irrigated activities Where the water is sourced from an SA Water owned or operated mains water supply network.	Minister

Act definitions of water affecting activities	Examples of WAAs	WAAs excluded from requiring a permit – general exclusions	WAAs excluded from requiring a permit – specific exclusions	Relevant authority
s104(4)(j) Using effluent in the course of carrying on a business in the Northern and Yorke landscape management region at a rate that exceeds the rate prescribed by this Policy	Use of treated effluent (e.g. Community Waste Management System (CWMS)) for irrigation. Use of treated effluent for industrial purposes	permit for that activity	Exclusion for zone NY3: Where effluent is used on the land at a rate of up to 1 ML/ha/y; or up to 1 ML/y for non- irrigated activities Where a person or business undertaking a WAA is legally obligated to comply with a mandatory code of practice for the use of effluent that is consistent with the principles in this plan (for example, but not limited to, the EPA <i>Code of Practice for Milking Shed Effluent 2003</i>)	Minister
s104(4)(l) An activity prescribed by the regulations		None	None	To be determined

2.3.1 Water-affecting activity permit general objectives

The general objectives and principles against which all ‘on-merit’ WAA applications will be assessed within the Northern and Yorke region are outlined below.

For the purposes of section 2.3:

- Any terms used that are defined in the Act carry the meaning given by the Act; and
- Any terms used in this plan that are defined in the ‘Water affecting activity definitions’ in section 2.4 carry the meanings given in that section, unless otherwise specified, or where used in a general sense.
- Terms that are given in italics are defined in section 2.4. Italics are generally only used the first time a term is used within a principle. Note that commonly used terms defined in section 2.4 are generally not italicised for the sake of visual clarity.

Objectives

A: Support development and use of water resources in a sustainable and equitable manner to maximise productive use, while providing for the needs of natural ecosystems and other water uses, in the long-term.

B: Prevent activities which could lead to unacceptable deterioration in the quality and quantity of water resources.

C: Minimise adverse impacts of activities on other natural resources and the community.

D: Protect aquifer integrity, and geomorphology of watercourses, lakes and floodplains.

E: Protect the long-term integrity of ecological functions and dependent biodiversity.

Principles

1. A WAA must be undertaken in such a way that, in both the short-term and the long-term, it ensures:

- a) maintenance or improvement of water quality
- b) capture of water is within sustainable limits
- c) equitable sharing of the water available for consumptive use
- d) maintenance of natural hydrological and hydrogeological systems, and *environmental water requirements*
- e) preservation of *water-dependent ecosystems*
- f) protection against the risk of harm to public and private assets and public safety from flooding
- g) continued monitoring of potential impacts from the activity where appropriate.

2. A WAA must not:

- a) cause or exacerbate soil erosion or bank destabilisation of a watercourse or lake, or erosion of a floodplain
- b) be located in ecologically sensitive areas where the activity will or is likely to have a significant detrimental impact
- c) have adverse impacts on water resources, other natural resources, or communities at both local and regional levels
- d) have adverse impacts on biodiversity and habitat preservation, *water-dependent ecosystems*, *environmental water requirements* and migration of aquatic biota
- e) cause or exacerbate unnatural waterlogging or rising watertables
- f) cause unacceptable deterioration in the quality of surface water, underground water or water in a watercourse or lake
- g) create or exacerbate the incidence or intensity of local or regional flooding or increase the flood risk to public and private assets, communities or individuals
- h) impact on authorised devices or activities for scientific purposes
- i) cause damage to the integrity of an aquifer or aquifers.

2.3.2 Objectives and principles for specific water-affecting activities

[NB: Principle numbers 3 to 6 intentionally omitted]

- 3. n/a
- 4. n/a
- 5. n/a
- 6. n/a

In addition to the general objectives and principles set out in section 2.3.1, the relevant authority will consider the following objectives and principles when determining whether to grant or refuse a permit for an activity that will be assessed 'on merit', and when considering best practice operating procedures.

2.3.3 Constructing, backfilling or repairing wells—section 104(3)(a) and (b)

The following objectives and principles apply specifically to an activity under the following sections of the Act:

- 104(3)(a): drilling, plugging, backfilling or sealing of a well; and
- 104(3)(b): repairing, replacing or altering the casing, lining or screen of a well;

referred to hereafter as the 'activity' or 'activities'.

Objectives

In addition to the general objectives outlined in section 2.3.1;

- F: Ensure the integrity of *headworks* are maintained
- G: Ensure wells are constructed in the correct aquifer system.

Principles

In addition to the general principles outlined in section 2.3.1;

7. Well construction must be in accordance with the General Specification for Well Construction, *Modification and Abandonment in South Australia* (or any subsequent or related policy), as provided by the relevant authority.
8. The equipment, materials and method used for the activity shall not adversely affect the quality of the underground water resource.
9. Aquifers shall be protected during the activity to prevent adverse impacts on the integrity of an aquifer.
10. Where a well passes through two or more aquifers, an impervious seal must be made and maintained between the aquifers to prevent leakage between aquifers.
11. Wells drilled for the drainage or discharge of water into a well shall be pressure cemented along the full length of the casing.
12. The activity shall not adversely affect the quality, quantity and accessibility of water for supply from existing wells operated by other landholders. This includes that in Zones NY8 and NY10, a new well constructed for the purpose of taking underground water must not be located within 300 metres of an operational well that has a permit or licence to recharge the underground aquifer and is being used for *managed aquifer recharge* (MAR) unless:
 - a) the new well will be completed in an aquifer that is not in direct hydraulic connection with the aquifer into which the water is being recharged; or
 - b) the new well is part of the existing MAR scheme.
13. The activity shall not adversely affect *water-dependent ecosystems*.
14. In zone NY3, the activity shall not significantly increase local drawdown.
15. [n/a – intentionally omitted]
16. A well may be deepened provided that it does not penetrate a different aquifer.
17. Despite principles 12-14, a replacement well may be drilled provided that:
 - a) the original well is backfilled in accordance with a permit issued pursuant to section 127(3)(a) of the Act;
 - b) the replacement well is within 20 metres of the original well; and
 - c) the replacement well takes water only from the same aquifer as the original well.

2.3.4 Drainage or discharging water into a well—section 104(3)(c)

The objectives and principles that follow apply specifically to an activity under section 104(3)(c) of the Act, comprising draining or discharging water directly or indirectly into a well.

In addition to the objectives and principles outlined in this section, the requirements of the *Environment Protection Act 1993*, and associated relevant policies such as the *Environment Protection (Water Quality) Policy*, should be considered.

Objectives

In addition to the general objectives outlined in section 2.3.1;

H: Ensure the integrity of *headworks* are maintained.

I: Ensure the sustainable operation and management of *managed aquifer recharge* schemes (also known

as aquifer storage and recovery schemes).

Principles

In addition to the general principles outlined in section 2.3.1;

18. Water that is drained or discharged into a well must comply with the Environmental Protection Act 1993 and any associated policy.
19. A permit to drain or discharge water into a well will not be issued unless a risk assessment is undertaken to the satisfaction of the relevant authority. This risk assessment must be consistent with the *National Water Quality Management Strategy—Australian Guidelines for Water Recycling: Managing Health & Environmental Risks, Phase 1 2006* and *Phase 2 2009*, and other related documents current at the time, including:
 - a) an investigation into the sustainability of the drainage or discharge site, including but not limited to, tests for transmissivity, maximum injection pressures and calculated likely impacts on the integrity of the well and confining layers, and impacts of potentiometric head changes to other underground water users
 - b) an appropriate operation or management plan demonstrating that operational procedures and monitoring regimes are in place to protect the integrity of the aquifer, minimise the wastage of water and protect the discharge site on an ongoing basis
 - c) a water quality assessment which identifies hazards in the source water
 - d) a report on the consequences and impacts to the *ambient underground water* resource where the water quality characteristics (salinity and chemistry composition) of the water to be discharged differs to that of the *ambient underground water*.
20. Water that is drained or discharged into a well only by means of gravity is exempt from meeting the requirements of principle 19 a).
21. Roof runoff that is drained or discharged into a well via a closed system of capture and transport is exempt from meeting the requirements of principles 19 a), b) and d), provided that the system is equipped with a mechanism to divert first flush water.
22. Further to principle 19 b), continuation of draining and discharge is dependent on an annual report that addresses the impacts to the *ambient underground water* at the draining or discharge site. Roof run-off captured in a closed system and then drained or discharged into a well is exempt from this principle.
23. For the purposes of principles 18 and 19, the relevant concentrations, levels or amounts shall be measured in sufficient representative samples of:
 - a) the water to be drained or discharged
 - b) *ambient underground water* collected from the proposed point of injection, or as near as possible to the proposed point of injection.

For the purpose of this principle, 'sufficient representative samples' means suitable samples, collected with equipment appropriate for the substance, material or characteristic to be measured and taken at suitable locations and times to accurately represent the quality of the relevant water.

24. The draining or discharging of water directly or indirectly into a well must not degrade ecosystems dependent on the underground water or detrimentally affect the ability of other persons to lawfully take from that underground water.
25. The *headworks* for the draining or discharge of water shall be constructed so that extraction, draining and discharge operations can be metered without interference.

26. The *headworks* for the draining or discharge of water shall be constructed so that water cannot leak if the well becomes clogged.

27. Wells constructed for the draining or discharge of water at pressures greater than gravity must be pressure cemented along the full length of the casing. This does not exempt the need to follow the general specifications for well construction.

2.3.5 Water diversion and collection—sections 104(3)(d) and 104(5)(a)

The objectives and principles that follow apply to an activity under the following sections of the Act: 104(3)(d): the erection, construction, modification, enlargement or removal of a dam, wall or other structure that will collect or divert, or collects or diverts—

- i. water flowing in a prescribed watercourse; or
- ii. water flowing in a watercourse in the Mount Lofty Ranges Watershed that is not prescribed; or
- iii. surface water flowing over land in a surface water prescribed area or in the Mount Lofty Ranges Watershed; and
- iv. 104(4)(a): the erection, construction, modification, enlargement or removal of a dam, wall or other structure that will collect or divert, or collects or diverts, water flowing in a watercourse that is not in the Mount Lofty Ranges Watershed and that is not prescribed or flowing over any other land that is not in a surface water prescribed area or in the Mount Lofty Ranges Watershed.

Note – Basin Plan limits for non-prescribed surface water management zone

This section includes principles that contribute to meeting South Australia’s responsibilities under the Commonwealth’s Basin Plan. The Northern and Yorke landscape management region includes part of the South Australian Non-Prescribed Areas surface water sustainable diversion limit (SDL) resource unit, a planning unit within the Basin Plan’s South Australian Murray Region water resource plan area (see Figure 2.3.3). This surface water SDL resource unit also includes parts of the, Murraylands and Riverland, South Australian Arid Lands, Hills and Fleurieu, and Limestone Coast landscape management regions.

The Basin Plan sets a sustainable diversion limit for this SDL resource unit that caps allowable surface water taking in the area. The allowable future dam development capacity within the sustainable diversion limit for this SDL resource unit has been apportioned by agreement between the three NRM regions’ prior to the boundary changes relevant to the introduction of the *Landscape South Australia Act, 2019* (namely the South Australian Murray-Darling Basin, South Australian Arid Lands and South East NRM Boards). While the boundaries of the previous South Australian Arid Lands NRM Board region and South East NRM Board region align with the South Australian Arid Lands landscape management region and Limestone Coast landscape management regions respectively, the part of the surface water SDL resource unit within the previous South Australian Murray-Darling Basin NRM Board area, referred to as the non-prescribed surface water management zone, is now divided across the Murraylands and Riverland; Hills and Fleurieu; and Northern and Yorke Landscape regions. To ensure that development is managed within the previously negotiated limit of 38,600ML for the *non-prescribed surface water management zone*, the three Landscape Boards now responsible for the management of the *non-prescribed surface water management zone* will use a centralised database to track and manage development against the available limit.

The dam capacity limit that applies to the *non-prescribed surface water management zone* applies to the total dam capacity, including existing dam capacity and future dam development.

Note: Catching and holding dams

Dams have traditionally been constructed across watercourses and drainage paths to directly capture

water for a variety of purposes.

A dam that directly catches runoff or flow typically inhibits all flow until the dam is filled. Once filled, water spills over and flows further downstream. Such *catching dams* have been shown to reduce the rate and volume of streamflow, and change the pattern of streamflow, from natural undeveloped conditions. *Catching dams* may create problems for both other users and ecosystems downstream as they can reduce flow duration and total yield, and lengthen periods of no flows. There is little flexibility in the management of *catching dams* as they generally capture all runoff or flow until full.

Greater flexibility is provided by *holding dams*, where water is stored in a *holding dam* after being diverted from a *catchment area* or watercourse via a mechanism like a weir, pump or channel, rather than directly capturing runoff or flow with the dam. This is because the mechanism used to divert runoff or water from a watercourse can be varied more easily to allow capture of water at different times or flow rates.

Objectives

In addition to the general objectives outlined in section 2.3.1;

- I. Ensure that dams, walls or any other water collection or diversion mechanisms are sited, constructed and operated in a manner which:
 - a) protects the rights of downstream water users (including the environment) to access those water resources; and
 - b) maintains amenity.

Principles

In addition to the general principles outlined in section 2.3.1;

Siting

28. A dam, wall or other *structure* for the storage, collection or diversion of water must not:

- a) be constructed in areas prone to erosion
- b) contribute to dryland salinity or intrusions of saline underground water into watercourse
- c) be constructed or enlarged in ecologically sensitive areas, where this will cause or be likely to cause significant detrimental impacts.

29. *Catching dams* must not be constructed or enlarged in or across watercourses with a *stream order* of three or higher, except in Zone NY3, where this may be permitted in exceptional circumstances where the proponent can demonstrate, to the relevant authority's satisfaction, that there is no reasonably practical alternative approach on the *property* to collect or access sufficient water to meet the reasonable requirements of the proponent.

30. In all other cases, *holding dams* should be constructed in preference to *catching dams*, unless it is not reasonably practical to do so.

Non-prescribed surface water management zone

31. A dam, wall or other *structure* that collects or diverts water must not be constructed or enlarged in zone NY3, if this would cause the total volume of dam capacity in the *non-prescribed surface water management zone* to exceed the *non-prescribed surface water management zone limit* of 38,600 ML.

32. For the purposes of principle 31:

- a) the *non-prescribed surface water management zone* is shown in Figure 2.3.3.
- b) the dams and their capacities in the *non-prescribed surface water management zone* considered to exist prior to 30 June 2009 are given in Topography Water Bodies dataset

Number 902 archived by the Department for Environment, Water and Natural Resources for the purposes of Basin Plan compliance.

33. A dam must not be constructed or enlarged if that activity would cause the total volume of dam capacity in a sub-catchment zone shown in Figure 2.3.4 to exceed (or further exceed) the sub-catchment dam capacity limit specified in column 7 of Table 2.3.2 for that zone (where relevant).
34. When the sub-catchment dam capacity limit for a sub-catchment zone has been reached or exceeded, any other methods of surface or watercourse water diversions or harvest shall not be permitted in that zone, if it may result in a net increase in the volume of water to be collected or diverted.

Property limits

35. A dam must not be constructed or enlarged if that activity would:
 - a) In zone NY3, cause the total volume of dam capacity on a *property* to exceed (or further exceed) the *property* dam capacity limit for that *property*. For the purposes of 35 a), the *property* dam capacity limit for a given *property* is calculated as follows:

0.3 (30% of) X the area of the *property* (km²) X long term average rainfall between the months of May and November (mm) for the locality X 0.1 (10% run-off coefficient);
 - b) In zones NY8 and NY10, result in the combined capacity of all dams in a catchment within an *allotment* exceeding 50 per cent of the annual runoff for that catchment in the *allotment*.

Note: For the purposes of principle 35 b):

'annual runoff' is a volume derived from 10 per cent of the mean annual rainfall for the *allotment*, multiplied by the area of the *allotment*; and

the term '*allotment*' means an *allotment* delineated on a certificate of title under the Real Property Act 1886 and includes two or more contiguous *allotments* owned or occupied by the same person and operated as a single unit for the purpose of primary production.

Exception to limits

36. Principle 35 does not apply where the diversion is solely for the purpose of improving water quality, and/or mitigating flooding, prior to returning the diverted water to the same watercourse or *drainage path* within three days (or other period as determined by the relevant authority), with loss of water volume only allowed via minimised evaporation and seepage from the water body.
37. Principle 35 does not apply to authorised *structures* for the specific purpose of measuring streamflow.

For the purpose of this principle, an 'authorised *structure*' means a *structure* authorised by the Board, a local government authority or the Minister.

38. Where a dam (the 'original dam') has been washed away, a permit may be granted to construct a replacement dam of the same capacity as the original dam, despite principle 35, provided that:
 - a) the capacities of the original and replacement dams are demonstrated to the relevant authority's satisfaction; and
 - b) the replacement dam is constructed in the same location as the original dam, or on a part of the same *property* that is *hydrologically continuous* with the original dam within the *property*.
39. In zone NY3, new dam capacity may be allowed in addition to the limits set out in principle 35 to collect additional runoff generated from human-made areas of low permeability (such as hard surfaces created by urban or industrial development), provided that:

- a) it can be demonstrated to the relevant authority's satisfaction by a suitably qualified expert that collecting the additional runoff will not compromise the provision of water requirements of water- dependent ecosystems and existing consumptive users; and
- b) pre-development runoff and recharge from the site is returned to the environment:
 - i) as close as reasonably practical to the natural flow path;
 - ii) as soon as reasonably practical following precipitation, unless detained on-site for water quality remediation and/or mitigation of flooding, in which case the pre-development runoff and recharge must be returned to the environment within three days of collection or diversion (or other period as determined by the relevant authority);
 - iii) in a manner that maintains the natural flow regime and aquifer recharge;
 - iv) in a manner that does not cause significant detrimental impacts to the environment, including but not limited to erosion and detrimental impacts to stream bed and bank stability.

40. For the purposes of principle 39:

- a) Pre-development runoff and recharge is the mean annual volume expected to return to water resources from the site under conditions prior to the creation of the low permeability surfaces that give rise to additional runoff.
- b) Pre-development runoff and recharge, and the volume of additional runoff generated by low permeability areas, will be determined to the satisfaction of the relevant authority by a suitably qualified hydrologist or engineer.

Flow regime

41. A dam, wall or other *structure* that collects or diverts surface water flowing over land or water from a watercourse must include a device that ensures any water present at or below the threshold flow rate will:

- a) not be collected or diverted; or
- b) in zone NY3, be bypassed around the dam, wall or other *structure*, or otherwise returned to the same watercourse or surface water drainage path immediately downstream of the dam, wall or other *structure* as soon as reasonably practical AND the water will be of an equivalent or better quality; or
- c) in zones NY8 and NY10, be bypassed around the dam, wall or other *structure*, or otherwise returned to the same watercourse or surface water drainage path immediately downstream of the dam, wall or other *structure* as soon as reasonably practical.

42. For the purposes of this section:

- a) in Zone NY3, the *threshold flow rate* (in litres/second) is calculated by multiplying the *unit threshold flow rate* (in litres/second/km²), by the area of *catchment area* (in km²) above the point where the water is diverted from the watercourse or drainage path, where the *unit threshold flow rate* is determined by the relevant authority.
- b) In Zones NY8 and NY10, the threshold flow rate (litres/second) means:
 - i. the flow rate of a watercourse or drainage line (litres/second) determined by multiplying the unit threshold flow rate (litres/second/square kilometre) by the area of catchment (square kilometre) that contributes to the watercourse or drainage line, that is above the point where the water is diverted from the watercourse or drainage line: or
 - ii. 1 litre/second, whichever is the greater.

For the purposes of (i), the unit threshold flow rate of a subcatchment can be determined by dividing the 10th per centile flow rate (litres/second) for a subcatchment (square kilometres), where the 10th per centile flow rate is the flow rate (litres/second) obtained

from a time weighted annual flow duration curve (with the time step being 1 day - mean flow), which is greater than or equal to 10 per cent of all flows during that period.

43. A device that will achieve the outcomes required by principle 41 shall:
- a) be designed and constructed to ensure its correct operation is automated and, as far as reasonably practicable, cannot be manually overridden
 - b) not be obstructed or tampered with in any way
 - c) be maintained in such a condition that it continues to be effective in meeting principle 41.

Dam design features

44. Dams, walls, or other *structures* for the collection, storage or diversion of water should, where appropriate and practicable, be designed and constructed to incorporate a range of features to improve water quality and enhance ecological values. Such features include, but are not limited to:
- a) an irregular edge
 - b) a variety of depths to increase habitat for a variety of plants and animals
 - c) well vegetated edges
 - d) minimal stock access
 - e) an upstream silt trap for *Catching dams* (one-tenth the size of the dam)
 - f) provision for aquatic biota migration where appropriate
 - g) provision of an island at least 0.5 metres above the maximum dam water level in water at least 0.5 metres deep.

Dam construction

45. The erection, construction, enlargement, modification or removal of a dam, wall or other *structure* to collect or divert water must be undertaken in a manner that minimises the removal or destruction of riparian and in-stream vegetation (e.g. via inundation of area).
46. The erection, construction, enlargement, modification or removal of a dam, wall or other *structure* to collect or divert water must be undertaken in a manner that prevents silt or sediments from entering the watercourse, including but not limited to the use of erosion and sediment control measures such as diversion drains, revegetation, straw bale barriers, filter fences, sediment traps and *detention basins*.
47. In Zone NY3, the erection, construction, enlargement, modification or removal of a dam, wall or other *structure* to collect or divert water must ensure a minimum 20-year design life in accordance with best practice guidelines (endorsed by the Board) for all watercourse flow conditions up to the 100-year *Average recurrence interval* (0.01 annual exceedance probability) flow rate for the proposed location.

Dam maintenance

48. In zones NY4, NY7, NY8, NY9 and NY10, a WAA permit is not required where the desilting of a dam only involves the removal of unconsolidated material deposited since construction of the dam or material deposited since the dam was previously desilted. In zone NY3, a WAA permit is not required where the *desilting* of a dam meets all of the following provisions:
- a) *desilting* only involves the removal of unconsolidated material deposited since construction of the dam or material deposited since the dam was previously desilted;
 - b) *desilting* does not enlarge the dam capacity or increase the dam wall height beyond their original dimensions;
 - c) the dam is not on a watercourse with a *stream order* of 3 or higher;
 - d) the excavated material is not placed in or near a watercourse, floodplain or lake;
 - e) the excavated material does not:

- i. adversely affect native vegetation;
- ii. impede the natural flow of surface water;
- iii. re-enter any water body; or
- iv. facilitate the spread of pest plants or pathogenic material; and
- v. appropriate measures are taken to minimise water quality impacts arising from *desilting*.

2.3.6 Building or structure in a watercourse, lake or floodplain—section 104(4)(b)

The objectives and principles that follow apply specifically to an activity under section 104(4)(b) of the Act, comprising the erection, construction or placement of any building or *structure* in a watercourse or lake or on the floodplain of a watercourse.

Objectives

As per the general objectives outlined in section 2.3.1.

Principles

In addition to the general principles outlined in section 2.3.1;

- 49. Construction and placement of *structures*—including roads—in a watercourse, floodplain of a watercourse, lake, wetland or area subject to inundation:
 - a) shall be designed to minimise the risk of erosion resulting from the construction and location of the *structure*;
 - b) must not adversely affect the provision of *environmental water requirements* (e.g. by impeding flows);
 - c) must not adversely affect the migration of aquatic biota;
 - d) must not result in flooding, either upstream or downstream; and
 - e) must not be constructed where it, or any debris collected by it, would increase the risk of damage to property or the risk to safety of persons.
- 50. *Structures* that impede the flow of water must be designed to bypass or otherwise return water present at or below the *threshold flow rate* in accordance with principles 41–43.
- 51. Principle 50 does not apply to *structures* authorised by the Minister or the relevant authority for the specific purpose of measuring stream flow, or for managing water flow to assist with maintenance, rehabilitation or restoration of locally indigenous *water-dependent ecosystems*, habitats, communities or species.

2.3.7 Drainage or discharge of water into a watercourse or lake—section 104(4)(c)

The objectives and principles that follow apply specifically to an activity under section 104(4)(c) of the Act, comprising draining or discharging water directly or indirectly into a watercourse or lake.

In addition to the objectives and principles outlined in this section, the requirements of the *Environment Protection Act 1993*, and associated relevant policies such as the *Environment Protection (Water Quality) Policy*, should be considered.

Objectives

In addition to the general objectives outlined in section 2.3.1;

K: Manage drainage or discharge water such that *Contaminants* are contained and managed on-site to minimise the conveyance of *Contaminants* into watercourses or lakes.

Principles

In addition to the general principles outlined in section 2.3.1;

- 52. Drainage or discharge of water into a watercourse or lake must only be undertaken where suitable protective measures have been provided to minimise degradation in the quality of the receiving water. Suitable protective measures may include, but are not limited to:
 - a) *detention basins* to regulate the rate, volume and quality of water discharged

- b) reuse of drainage or discharge water that occurs under conditions that would not present a risk to public or environmental health
- c) litter traps
- d) pre-treatment of the water before discharge
- e) a requirement that the quality of water drained or discharged into a watercourse lake or floodplain is of a quality similar to or better than that of the receiving water environment

In addition, in zone NY3, this may include ensuring that discharge into the receiving waters occurs at times of naturally high flow.

53. All treatment devices must be appropriately managed to ensure that they continue to function according to their design, particularly in the removal of accumulated sediment and litter.

54. The rate, location and timing of discharge or drainage of water must occur such that:

- a) the geomorphology of the watercourse or lake is protected;
- b) *water-dependent ecosystems* (including their *environmental water requirements*), and migration of aquatic biota, are not adversely affected;
- c) the flow capacity of the watercourse or lake is considered; and
- d) there is no increase in the risk of flooding.

55. In zone NY3, storage of any contaminated water must only be undertaken in storage vessels with no natural catchment that are constructed to prevent leakage or overflow of any contaminated water.

Note: Waste stream from desalination processes

The discharge of a waste stream (brine and other chemicals) from desalination processes directly or indirectly to a watercourse or lake would be considered under this section of these policies for the control of WAAs.

2.3.8 Management of obstructions—sections 104(4)(d), (e) and (f)

The objectives and principles that follow apply specifically to an activity under the following sections of the Act:

- 104(4)(d): depositing or placing an object or solid material in a watercourse or lake;
- 104(4)(e): obstructing a watercourse or lake in any other manner; and
- 104(4)(f): depositing or placing an object or solid material on the floodplain of a watercourse or near the bank or shore of a lake to control flooding from the watercourse or lake.

Objectives

As per the general objectives outlined in section 2.3.1.

Principles

In addition to the general principles outlined in section 2.3.1;

56. Any object or solid material to be used in the control or prevention of watercourse erosion must be designed with consideration of the local-scale and catchment scale landscape and hydrological processes.

57. The depositing or placing of an object or solid material in a watercourse or lake, or obstructing a watercourse in any other manner, must not:

- a) cause or increase erosion;
- b) cause detrimental offsite impacts, for example, but not limited to, flooding;
- c) adversely affect *water-dependent ecosystems*; or
- d) adversely affect the migration of aquatic biota.

58. In relation to depositing or placing an object or solid material in a watercourse, or lake:

- a) in zone NY3, objects or solid materials or other obstructions that impede the flow of water must be designed to bypass or otherwise return water present at or below the *threshold flow rate* in accordance with principles 41-43, where applicable;
- b) in zones NY8 and NY10, the activity may be undertaken only where it includes:
 - i. the construction of an erosion control *structure*, for example a *rock chute* or
 - ii. a device or *structure* used to extract or regulate water flowing in a watercourse, for example diversion weirs, or
 - iii. an activity required for scientific purposes, for example flow measuring devices.

59. Principle 58 does not apply to *structures* authorised by the Minister or the relevant authority for the specific purpose of measuring stream flow, or for managing water flow to assist with maintenance, rehabilitation or restoration of locally indigenous *water-dependent ecosystems*, habitats, communities or species.

60. Depositing or placing an object or solid material on the floodplain of a watercourse, or near the bank or shore of a lake, to control flooding from the watercourse or lake shall not:

- a) adversely affect the natural flow of a watercourse
- b) increase the risk of flooding (upstream or downstream), or
- c) cause or increase erosion.

61. Depositing or placing an object or solid material on the floodplain of a watercourse, or near the bank or shore of a lake, to control flooding from the watercourse or lake should:

- a) provide for the needs of ecosystem processes (including the migration of aquatic biota); and
- b) minimise the impact or risk of flooding on human communities.

2.3.9 Management of vegetation removal and excavation - sections 104(4)(g) and (h)

The objectives and principles that follow apply specifically to an activity under the following sections of the Act:

- 104(4)(g): destroying vegetation growing in a watercourse or lake or growing on the floodplain of a watercourse; and
- 104(4)(h): excavating or removing rock, sand or soil from—
 - i. a watercourse or lake or the floodplain of a watercourse; or
 - ii. an area near to the banks of a lake so as to damage, or create the likelihood of damage to, the banks of the lake.

Note: Native vegetation controls

In most cases, destruction of, damage to and removal of native vegetation requires approval under the South Australian *Native Vegetation Act 1991*. Issuing a water affecting activity permit does not negate the need to comply with the provisions of the *Native Vegetation Act 1991*.

Objectives

As per the general objectives outlined in section 2.2.1.

Principles

In addition to the general principles outlined in section 2.3.1;

62. Alteration to the alignment of a watercourse, or destruction of vegetation within a watercourse, lake or floodplain shall only occur where it is for the protection of existing infrastructure or rehabilitation of a watercourse, lake or floodplain, and the activity does not result in any of the following:

- a) increased erosion

- b) increased flooding
- c) bed and bank instability
- d) downstream sedimentation
- e) destruction of significant habitat for native fauna
- f) decline in water quality
- g) alteration to the natural flow regime of a watercourse.

63. The excavation and removal of rock, sand or soil, or destruction of vegetation within a watercourse, lake or floodplain, must not adversely affect either:

- a) the ecology of a watercourse, lake or floodplain, or
- b) migration of aquatic biota.

2.3.10 Use of imported water and effluent - sections 104(4)(i) and (j)

The objectives and principles that follow apply specifically to an activity under the following sections of the Act:

- 104(4)(i): using water in the course of carrying on a business at a rate that exceeds one megalitre per hectare per year, or one megalitre per year for non-irrigated activities, if the water has been brought into the region by means of a pipe or other channel ('imported water'); and
- 104(4)(j): using effluent in the course of carrying on a business at a rate that exceeds one megalitre per hectare per year, or one megalitre per year for non-irrigated activities.

In addition to the objectives and principles outlined in this section, the requirements of the *Environment Protection Act 1993*, and associated relevant policies such as the *Environment Protection (Water Quality) Policy*, should be considered where relevant.

Objectives

In addition to the general objectives outlined in section 2.3.1;

L: Ensure that *effluent* is used in such a manner that risks to public health are minimised.

M: Protect the productive capacity of the land.

Principles

In addition to the general principles outlined in section 2.3.1;

- 64. A permit is not required for the use of imported water and *effluent* where the water or *effluent* is used on the land at a rate of up to one megalitre per hectare per year, or up to one megalitre per year for non-irrigated activities.
- 65. A permit is not required where a person or business undertaking a WAA is legally obligated to comply with a mandatory code of practice for the use of *effluent* that is consistent with the principles in this plan (for example, but not limited to, the EPA Code of Practice for Milking Shed Effluent 2003 or its successors).
- 66. In zone NY3, the use of *effluent* must be undertaken in a manner that minimises risks to human health.
- 67. The use of imported water or *effluent* must not cause a rise in underground water levels that would adversely affect land, public and private assets, other water resources or natural resources and their beneficial uses.
- 68. The use of imported water or *effluent* must not adversely affect the natural flow regime or ambient quality of the receiving waters.

69. The use of imported water or *effluent* must not adversely affect the productive capacity of the land by impacts including, but not limited to, increasing salinity, water logging, sodicity, toxicity, nutrient concentrations or watertables.

70. The use of imported water or *effluent* must not adversely affect the condition, biodiversity or extent of a water- dependent ecosystem.

71. In relation to the storage of imported water or *effluent*:

a) in zone NY3:

- i. any dams constructed for the storage of chlorine-treated imported water or *effluent* must be constructed so as to prevent:
 - leakage from the dam through the soil
 - overflows from the dam onto the surface of the land surrounding the dam
 - overflow from the dam into a watercourse or lake.
- ii. any dams constructed for the storage of chlorine-treated imported water or *effluent* must not be located in a watercourse, floodplain, lake, or drainage path.
- iii. the use of imported water or *effluent* will not be permitted where its use will adversely affect the environment.

b) in zones NY8 and NY10, imported water or *effluent* should be stored in a closed system, with no natural catchment, and constructed to prevent:

- i. leakage to the surrounding soils
- ii. overflow from the dam to the surface of the land surrounding the dam
- iii. overflow from the dam into a watercourse.

Figure 2.3.2: The South Australian Non-Prescribed Areas surface water sustainable diversion limit (SDL) resource unit, a planning unit within the Basin Plan's South Australian Murray Region water resource plan area.

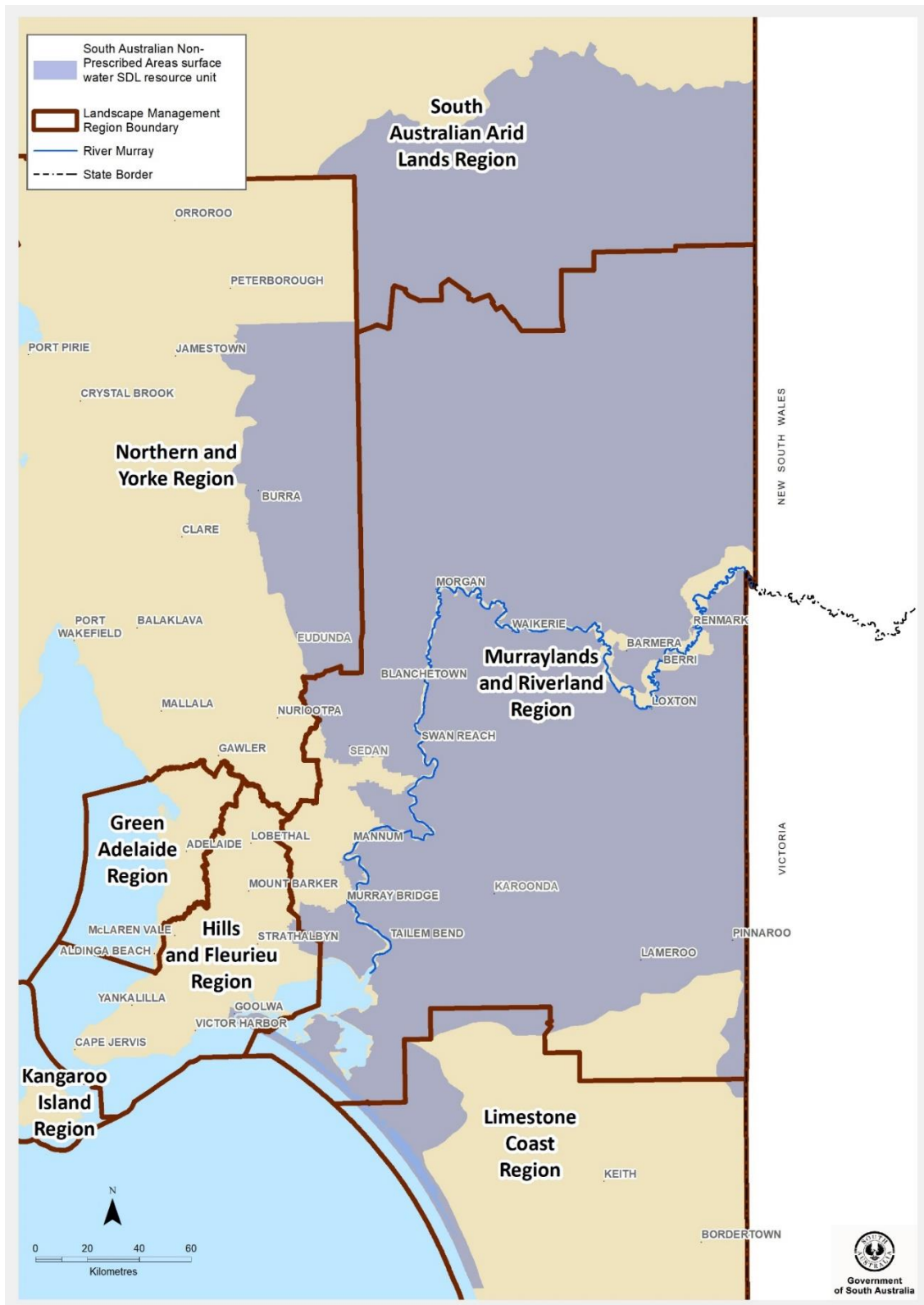


Figure 2.3.3: Non-prescribed surface water management zone map

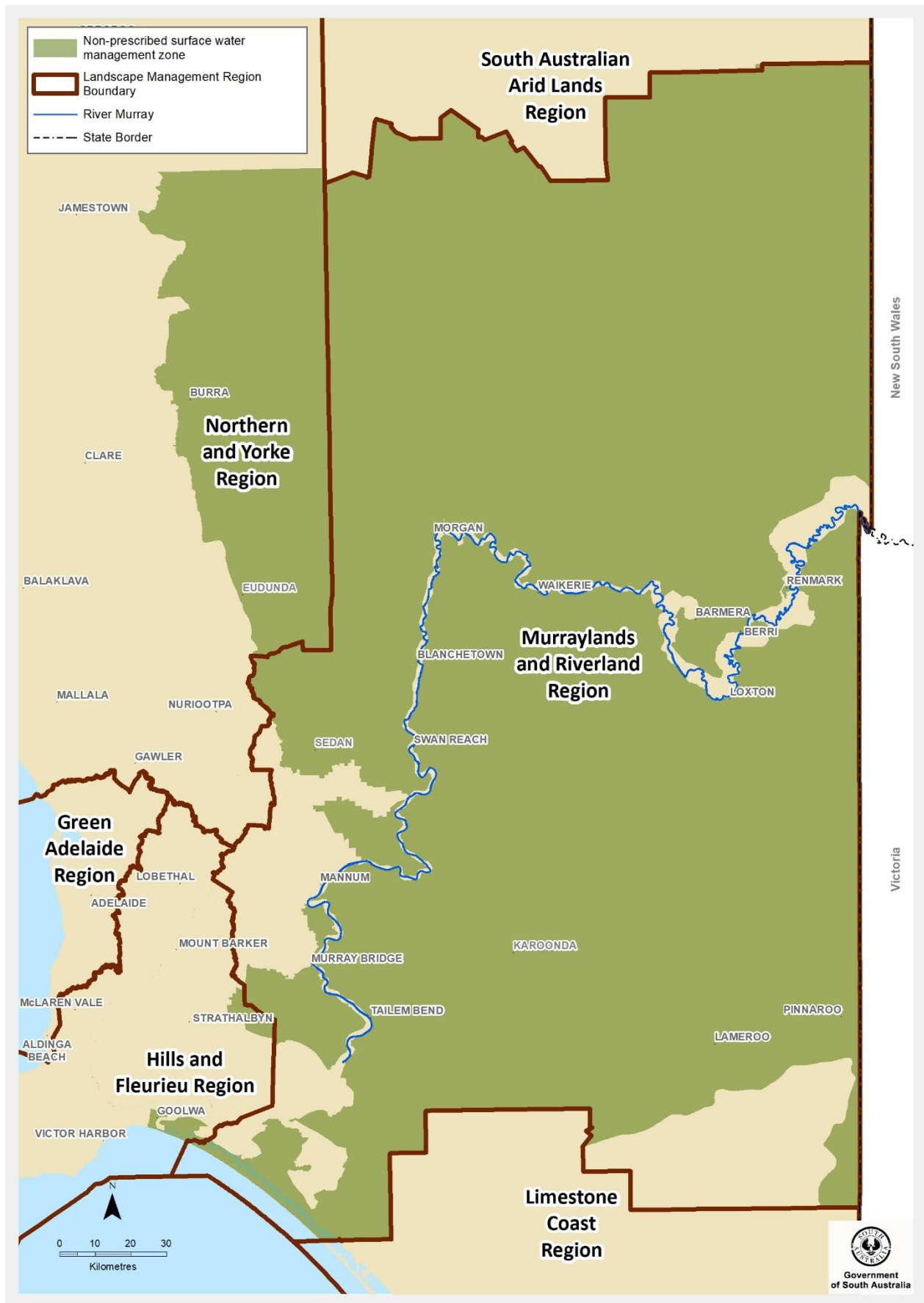


Figure 2.3.4: Sub-catchment zone map

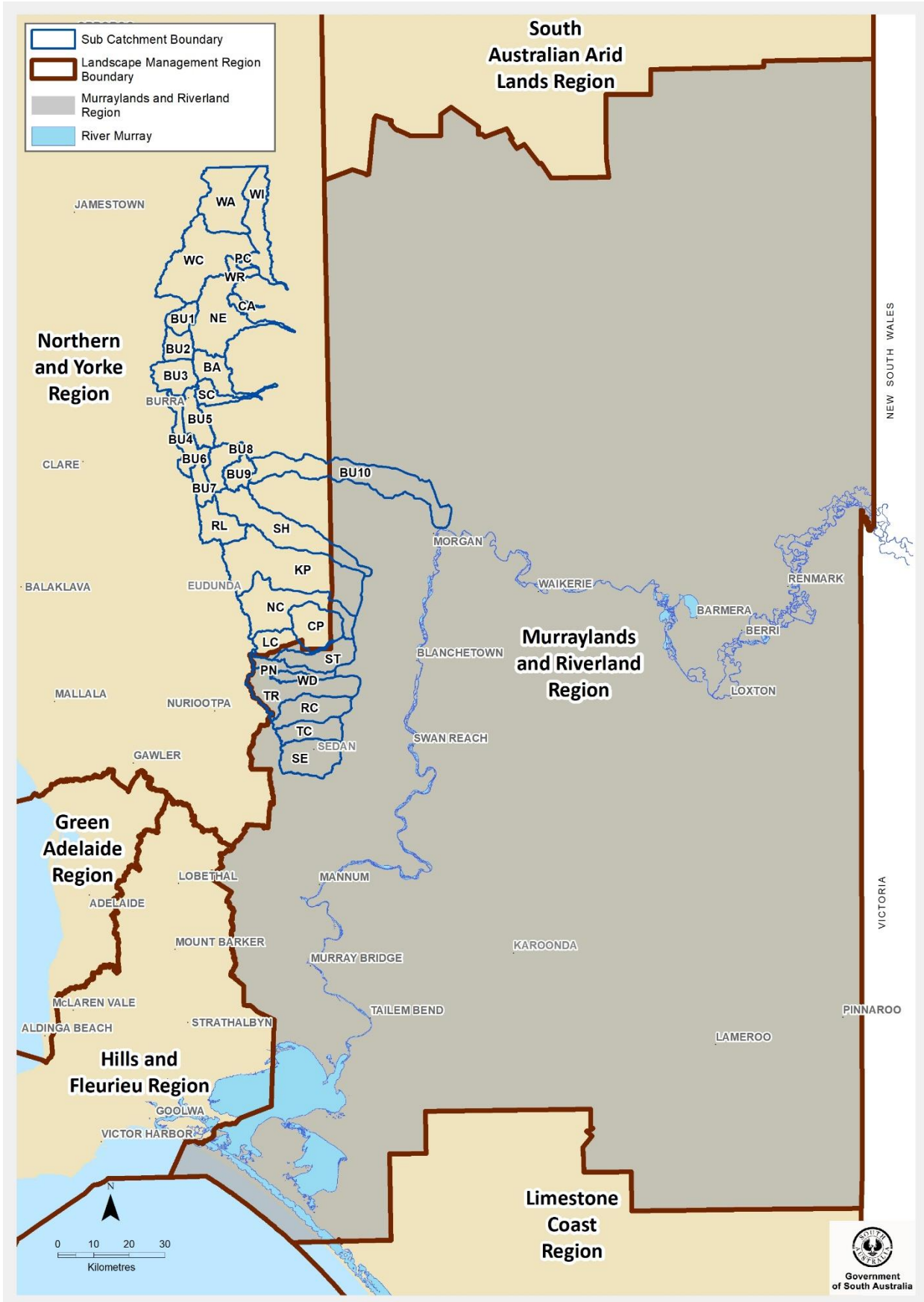


Table 2.3.2 Subcatchment zone data

Catchment	Sub-catchment zone code	Sub-catchment zone area (km ²)	Average annual rainfall (mm)	Average May-November rainfall (mm)	Average May-Nov runoff (10% of May - Nov rainfall) (mm)	30% of May-November runoff (mm)	Sub-catchment dam capacity limit (ML)	Unit threshold flow rate (L/s/km ²)
Baldina Creek	BA	99	415	306	31	9	909	1
Burra Creek—Razorback	BU1	53	420	309	31	9	491	1
Burra Creek—Mount Bryan TS	BU2	64	440	330	33	10	629	1
Burra Creek—Firewood Creek	BU3	99	462	347	35	10	1,031	1
Burra Creek—Springbank Valley	BU4	40	462	346	35	10	415	1
Burra Creek—Upper Burra Creek	BU5	90	439	325	32	10	876	1
Burra Creek—Logan Creek	BU6	66	473	356	36	11	700	1
Burra Creek—Lagoon Hill	BU7	48	473	356	36	11	510	1
Burra Creek—Worlds End	BU8	83	315	223	22	7	553	1
Burra Creek—Mid Burra Creek	BU9	61	315	223	22	7	409	1
Burra Creek—Lower Burra Creek	BU10	335	235	157	16	5	1,583	1
Caroona Creek	CA	19	261	181	18	5	104	1
Craigie Plain	CP	145	303	209	21	6	910	1
Keynes Plain	KP	468	321	225	23	7	3,163	1
Levi Creek	LC	90	442	327	33	10	888	1
Narcoota - Deep Creek	NC	248	380	269	27	8	1,999	1
Newikie Creek	NE	248	415	306	31	9	2,274	1
Piltimitiappa Creek	PC	10	235	148	15	4	45	1
Robertstown Lagoon	RL	107	476	352	35	11	1,130	1
Stone Chimney Creek	SC	51	396	283	28	8	436	1
Spring Hut Creek	SH	280	314	219	22	7	1,842	1
Stonefield	ST	119	342	242	24	7	860	1
Waupunyah Creek	WA	221	264	168	17	5	1,116	1
Wonna Creek	WC	329	395	288	29	9	2,847	1
Witto Creek	WI	164	248	164	16	5	808	1
Williams Reservoir	WR	30	261	181	18	5	162	1

2.3.11 Water affecting activity definitions

Terms that are defined in the Act have the meaning as given by the Act. Definitions given for such terms in this section are provided for information, and the definition given in the Act takes precedence in the event of inconsistency.

Allotment: has the same meaning as in the *Real Property Act 1886*.

Ambient underground water: in relation to draining or discharging water into a well, means the underground water that occurs at the proposed site of injection in the relevant aquifer, prior to the commencement of the proposed drainage or discharge of water into a well.

Annual exceedance probability (AEP): the probability that a given flow or rainfall event will be exceeded in any one year.

Average recurrence interval (ARI): the average value of the periods between exceedances of a given flow or rainfall event.

Catching dam: a dam, wall or other *structure* placed on or constructed across a watercourse or drainage path for the purpose of holding back and storing the natural flow of that watercourse or the surface water flowing along that drainage path.

Catchment area: the *Catchment area* of a particular point means all of the land, determined by natural topographic features, from which runoff has the potential to naturally drain to that point.

Community Wastewater Management System (CWMS): an *effluent* collection, treatment and disposal/reuse system for a community.

Contaminants (and indicators of Contaminants): may include, but are not limited to, nutrients, metals, biological organisms (for example, *Escherichia coli*), temperature, dissolved oxygen, colour, turbidity, suspended sediments, leachate, hydrocarbons, and litter.

Desilting: the removal of unconsolidated material deposited in a dam since construction, or material deposited since the dam was previously desilted.

Detention basin: a pond or basin constructed for the temporary detention of water to provide time for suspended sediments and other heavy pollutants to settle before discharge into a watercourse, lake, or other water storage, and/or to regulate the rate and volume of water discharged.

Domestic wastewater: has the same meaning as in section 3(1) of the Act, meaning water used in the disposal of human waste, and water used for personal washing, and water used for washing clothes or dishes, and water used in a swimming pool.

Drainage path: the path that surface water naturally flows along over land.

Effluent: has the same meaning as in section 3(1) of the Act, meaning *domestic wastewater or industrial wastewater*.

Environmental water requirements: those water requirements that must be met in order to sustain the ecological values of ecosystems that depend on the water resource, including their processes and biodiversity, at a low level of risk.

Geomorphic characteristics: features of a landform or landscape including, but not limited to, bed and banks of a watercourse, floodplain of a watercourse or lake, cliffs, soils, rocks and other mineral forms.

Groundwater access trench (GAT): shallow trenches excavated to allow direct access to underground water.

Headworks: any assembly on top of a well and located between the well casing and the water delivery system.

Holding dam: a dam that is not constructed across a watercourse and is primarily designed to hold water from a source other than the *Catchment area* of the dam. Other water sources may include, but are not limited to, underground water and water diverted or pumped from a watercourse or *drainage path* that is

not in the *Catchment area* of the dam. *Holding dams* may capture a limited volume of surface water from the *Catchment area* of the dam (up to 5% of its total capacity).

Hydrologically continuous: two or more points in the landscape directly connected by the same *drainage path* or watercourse.

Industrial wastewater: has the same meaning as in section 3(1) of the Act, meaning water (not being *domestic wastewater*) that has been used in the course of carrying on a business (including water used in the watering or irrigation of plants) that has been allowed to run to waste or has been disposed of or has been collected for disposal.

Managed aquifer recharge (MAR): Water is artificially recharged (by draining or discharging water into a well) to an aquifer for subsequent recovery.

Non-prescribed surface water management zone: the area identified as the *non-prescribed surface water management zone* in Figure 2.33

Property: an *allotment* or contiguous *allotments* owned or occupied by the same person, persons or body, and operated as a single unit. *Allotments* will be considered to be contiguous if they abut at any point, or are separated only by a road, street, lane, footway, court, alley, railway, thoroughfare, easement, right-of-way, watercourse, channel or a reserve or similar open space.

Review Committee: *The Committee* established for the purpose of the *Groundwater (Border Agreement) Act 1985*.

Rock chute: An engineered rock structure designed to control the bed grade of a watercourse.

Stream order: a method of classifying the size of a part of a watercourse, based on the hierarchy of connecting watercourse segments. The Strahler stream ordering system is used in this plan. The most upstream part of a watercourse is a first order stream. Two first order watercourses join together to become a second order watercourse. Two second order watercourses join together to become a third order watercourse and so on. For the purposes of determining *stream order* for this plan, the network of watercourses is defined in the basis of current 1:50,000 topographic maps produced by the State Government.

Structure (in relation to a body of water or watercourse): something built or constructed, including, but not limited to, a ford, causeway, culvert, fence, jetty, boat mooring, weir or retaining wall.

Threshold flow rate: the flow rate at or below which water must not be taken, or if taken is to be returned to the same watercourse or *drainage path* immediately downstream of the structure, as soon as reasonably practical (in accordance with principles 41, 50 and 58). The value of the *threshold flow rate* for a given location is calculated in accordance with principle 42.

Transmissivity: a parameter indicating the ease of underground water flow through a metre width of aquifer section.

Unit threshold flow rate: used to determine the *threshold flow rate* in accordance with principle 42. The unit threshold will be determined by the relevant authority.

Water-dependent ecosystems: those parts of the environment, the species composition and natural ecological processes that are determined by the permanent or temporary presence of flowing or standing water, above or below ground. The in-stream areas of rivers, riparian vegetation, springs, wetlands, floodplains, estuaries, lakes and aquifer ecosystems are all *water-dependent ecosystems*.