

Water Sharing Plan for the Lower Murrumbidgee Groundwater Sources 2003

[2003-188]



New South Wales

Status Information

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Provisions in force

The provisions displayed in this version of the legislation have all commenced.

Notes—

- **Note**
This Plan ceases to have effect on 30.6.2017 — see cl 3.

Authorisation

This version of the legislation is compiled and maintained in a database of legislation by the Parliamentary Counsel's Office and published on the NSW legislation website, and is certified as the form of that legislation that is correct under section 45C of the [Interpretation Act 1987](#).

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Water Sharing Plan for the Lower Murrumbidgee Groundwater Sources 2003



New South Wales

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Water Sharing Plan for the Lower Murrumbidgee Groundwater Sources 2003



New South Wales

Part 1 Introduction

1 Name of Plan

This Plan is the *Water Sharing Plan for the Lower Murrumbidgee Groundwater Sources 2003* (hereafter **this Plan**).

2 Nature and status of this Plan

- (1) This Plan is made under section 50 of the *Water Management Act 2000* as amended (hereafter **the Act**).
- (2) This Plan covers the core provisions of section 20 of the Act for water sharing, and additional provisions of section 21 of the Act, and other relevant matters.

3 Date of commencement

This Plan takes effect on 1 October 2006, and ceases on the 30 June 2017.

4 Area to which this Plan applies

- (1) The area in respect of which this Plan is made is that area of land within the Murrumbidgee, Lachlan and Murray Water Management Areas known as the Lower Murrumbidgee Groundwater Sources (hereafter **these groundwater sources**) as shown on the map in Schedule 2.

Note—

The Murrumbidgee, Lachlan and Murray Water Management Areas are shown on the map in Appendix 1.

- (2) The groundwater sources referred to in this Plan are:
 - (a) the Lower Murrumbidgee Shallow Groundwater Source (hereafter **the Shallow Groundwater Source**), characterised by the Shepparton Formation, which is generally yellow and brown poorly sorted sand and clay sediments that extend to a depth of between 50 and 70 metres below the ground surface. The Shallow Groundwater Source extends to a depth of 40 metres, or the bottom of the

Shepparton formation, whichever is the deeper and

- (b) the Lower Murrumbidgee Deep Groundwater Source (hereafter the Deep Groundwater Source), generally represented by the Calivil and Renmark Formations, which are characterised by pale grey to white quartz sand layers, with lenses of grey to white clay, extending from the bottom of the Shepparton down to the bedrock, with a typical thickness of 100 to 300 metres.

Note—

Maps referred to in this plan may be inspected at offices of the Department listed in Schedule 2. A schematic representation of these groundwater sources is also available at these offices.

5 Waters to which this plan applies

The water in these groundwater sources includes all water contained in the Shepparton, Calivil and Renmark unconsolidated alluvial aquifers.

6 Interpretation

- (1) Terms that are defined in the Act have the same meaning in this Plan and the effect of these terms may be explained in Notes.
- (2) Additional terms to those identified in subclause (1) are defined in Schedule 1.
- (3) Notes in the text of this Plan do not form part of this Plan.
- (4) Schedules to this Plan form part of this Plan.
- (5) Appendices to this Plan do not form part of this Plan.

7 Effect on licences, authorities and permits under the [Water Act 1912](#)

- (1) This Plan applies from the date of commencement to those matters that are administered under the Act at that time.
- (2) This Plan applies to other matters from the date the relevant provisions of the Act are commenced.

Note—

To the extent possible, the rules embodied in this Plan will apply to matters administered under the [Water Act 1912](#) in the interim.

8 State Water Management Outcomes Plan

- (1) In accordance with section 16 (1) (a) of the Act this Plan is consistent with the State Water Management Outcomes Plan published in the NSW Government Gazette on 20 December 2002 (hereafter **the SWMOP**).
- (2) Schedule 3 identifies the SWMOP targets applicable to this Plan and how this Plan

contributes to those targets.

Part 2 Vision, objectives, strategies and performance indicators

9 Vision, objectives, strategies and performance indicators

This Part is made in accordance with section 35 (1) of the Act.

10 Vision

The vision for this Plan is the optimal, equitable and sustainable management of groundwater for environmental, economic and social purposes in the Lower Murrumbidgee.

11 Objectives

The objectives of this Plan are to:

- (a) share groundwater sustainably between users and the environment,
- (b) share groundwater equitably amongst extractive users,
- (c) provide for basic landholder rights and priorities of use,
- (d) protect groundwater quality,
- (e) maximise the social, economic and environmental benefits of groundwater management strategies, and
- (f) minimise the negative social and economic impacts of groundwater management strategies.

12 Strategies

The strategies of this Plan are to:

- (a) establish environmental water rules and manage access to groundwater consistent with those rules,
- (b) establish rules for the protection of basic landholder rights,
- (c) establish an extraction limit for each groundwater source, taking into account the requirements of the environment,
- (d) reduce the total share component of access licences in the Deep Groundwater Source to the final extraction limit in that groundwater source,
- (e) establish rules for the granting of access licences,
- (f) establish rules for determining the groundwater available from time to time under access licences,

- (g) establish water allocation account management rules,
- (h) establish rules for minimising the local impacts of groundwater extraction on the environment, the aquifer itself, and between users,
- (i) establish the access licence dealing rules, and
- (j) establish the mandatory conditions that will apply to all access licences and water supply work (bore) approvals.

13 Performance indicators

For the purpose of section 35 (1) (b) of the Act, the following indicators are to be used to determine the performance of this Plan against its objectives:

- (a) change in groundwater extraction relative to the extraction limits,
- (b) change in climate adjusted groundwater levels,
- (c) change in water levels adjacent to identified groundwater dependent ecosystems,
- (d) change in groundwater quality,
- (e) change in economic benefits derived from groundwater extraction and use,
- (f) change in structural integrity of the aquifer,
- (g) extent to which domestic and stock requirements have been met,
- (h) extent to which local water utility requirements have been met,
- (i) extent to which native title rights requirements have been met, and
- (j) extent of recognition of spiritual, social and customary values of groundwater to Aboriginal people.

Note—

Appendix 3 details the objectives to which these performance indicators relate and the methods for assessing these indicators.

Part 3 Basis for water sharing

14 Basis for water sharing

This Part is made in order to give effect to section 5 (3) of the Act, and in accordance with sections 20 (2) (c) and 21 (e) of the Act.

15 Climatic variability

- (1) This Plan recognises climatic variability and therefore that the level of natural

recharge to these groundwater sources will vary.

- (2) To give effect to subclause (1), this Plan has provisions that manage:
- (a) the sharing of water in these groundwater sources within the limits of water availability on a long-term average basis, and
 - (b) water extractions to enable the protection of groundwater dependent ecosystems, aquifer integrity and water quality of these groundwater sources.

16 Recharge

- (1) The overall basis for water sharing in this Plan is the average annual recharge to these groundwater sources, plus the requirements for basic landholder rights at the commencement of this plan and is as follows:
- (a) 65,000 megalitres per year (hereafter **ML/yr**), plus the requirements for basic landholder rights at the commencement of this plan for the Shallow Groundwater Source and,
 - (b) 335,000 ML/yr, plus the requirements for basic landholder rights at the commencement of this plan for the Deep Groundwater Source.

Note—

The recharge to the Shallow Groundwater Source of 65,000 megalitres is the net recharge resulting from inflow of 400,000 megalitres minus 335,000 ML/yr that passes through to the underlying Deep Groundwater Source, and is 65,000 ML/yr.

Note—

These recharge figures incorporate some recharge from irrigation losses to the shallow groundwater system. It is expected that, as irrigation losses diminish through infrastructure refurbishment and water efficiency measures, this component of the recharge will also diminish.

- (2) The Minister may under section 45 (1) (b) of the Act, amend subclause (1) after 30 June 2011 vary the average annual recharge values for these groundwater sources following further recharge studies undertaken by the Minister.

Note—

The extent of impact of this change on access by licence holders is limited by the provisions in clause 28.

Part 4 Environmental water provisions

17 Environmental water provisions

This Part is made in accordance with sections 5 (3) and 8 (1), 8 (2) and 20 (1) (a) of the Act.

18 Planned environmental water

Note—

It is anticipated that the planned environmental water provisions in this Part and management of local impact provisions in Part 10 of this Plan will also protect the cultural and spiritual values of groundwater.

- (1) This Plan establishes the following planned environmental water rules:
 - (a) subject to Part 10 Division 2 of this Plan, the physical water contained in the storage component of these groundwater sources, minus the amount required for supplementary water access permitted under clause 25, as varied by clause 29 will be reserved for the environment,
 - (b) subject to Part 10 Division 2 of this Plan 55,000 ML/yr of the average annual recharge to the Shallow Groundwater Source is reserved for the environment.
 - (c) subject to Part 10 Division 2 of this Plan 65,000 ML/yr of the average annual recharge to the Deep Groundwater Source is reserved for the environment.

Note—

Access to water under supplementary water access licences in this water source will not be permitted after the 30 June 2016 and the physical water contained in the storage component of these groundwater sources plus the portion of the long-term average annual recharge identified in subclauses (1) (b) and (1) (c) will be reserved for the environment.

- (2) The Minister may under section 45 (1) (b) of the Act, amend subclause (1) after 30 June 2011 to vary the proportion of recharge reserved as planned environmental water based on further studies of groundwater ecosystem dependency undertaken by the Minister.

Note—

The studies may recommend management options other than reservation of a portion of recharge to protect groundwater dependant ecosystems.

Note—

The extent of impact of this change on access by licence holders is limited by the provisions in clause 28.

19 (Repealed)

20 Adaptive environmental water

- (1) Water may be committed in these groundwater sources for environment purposes by an adaptive environmental water condition pursuant to section 8B of the Act.
- (2) The holder of an access licence may request that the Minister impose an adaptive environmental water condition in respect of the whole or a part of the share component of the access licence.
- (3) The condition imposed under subclause (2) will continue until the holder requests its

removal.

- (4) An access licence may be held by the Minister, a catchment management authority or other public body to the extent that the whole or part of that access licence has been surrendered as a result of on farm water savings made by works or other improvements, subject to:
 - (a) the share component of the access licence held being equal to the value of the on-farm water savings made,
 - (b) the access licence held being the highest priority category in these groundwater sources, other than a specific purpose category, and
 - (c) an adaptive environmental water condition being imposed on the access licence and that condition not being removed.
- (5) The adaptive environmental water condition specified in subclause (1) and the plan for implementation of that condition, as required by section 8E (7) of the Act:
 - (a) are to be established by the Minister, and
 - (b) shall be such as to ensure that there will be a contribution to the objectives of this Plan.
- (6) The allocation of water for access licences with an adaptive environmental water condition will be in accordance with the available water determination for the relevant category of access licence under this plan.
- (7) If the adaptive environmental water condition on an access licence requires the water to be left in the water source for environmental purposes, then the water allocation account is to be debited when the water is available in accordance with the adaptive environmental water condition on the access licence.
- (8) If the adaptive environmental water condition requires the environmental water to be taken from the water source then the water allocation account is to be debited when it is taken.
- (9) For the purposes of auditing compliance with the long-term extraction limit under this plan, water credited to an access licence that has been committed as adaptive environmental water shall be accounted for as extraction where it occurs pursuant to a licence under subclause (2) or subclause (4).
- (10) To the extent that the water allocation of an access licence which is subject to an adaptive environmental water condition is not required to meet the requirement of the condition it may be the subject of an assignment dealing in accordance with the Dealings Rules in this plan.
- (11) Notwithstanding subclause (10) an access licence with an adaptive environmental

water condition may be the subject of any other dealing permitted by the Dealing Rules in this plan, provided the benefit to the environment provided for in the adaptive environmental condition is not diminished.

- (12) At the commencement of this clause, there were no access licences with an adaptive environmental water condition in these groundwater sources.

Part 5 Basic landholder rights

21 Basic landholder rights

- (1) This Part is made in accordance with sections 5 (3) and 20 (1) (b) of the Act.
- (2) If a landholder is unable to exercise their basic landholder rights due to interference of their supply by extraction authorised by access licences:
- (a) the Minister may amend a water supply works approval to allow the landholder's affected bore to be replaced or deepened to ensure continuing access to water for basic landholder rights, or
 - (b) the Minister may amend another water supply works approval so that basic rights water may be supplied by an alternative water supply work during critical times.
- (3) In accordance with the legislative requirements, the Minister may impose a charge on access licence holders in these groundwater sources under section 114 of the Act, as a contribution to the costs of activities or works associated with subclause (2).
- (4) Basic landholders rights exercised under section 52 of the Act must be exercised in accordance with any guidelines established by the Minister with respect to the reasonable use of water for domestic consumption and stock watering by landholders authorised to use water for either or both of those purposes.

Note—

The Minister may, by order made under section 323 of the Act, impose temporary restrictions on basic landholder rights when it is necessary to do so in the public interest, such as to cope with a water shortage or threat to public health or safety.

Note—

The Minister may enforce any reasonable use guidelines by serving orders on individual landholders under section 325 of the Act. The Minister may also order individual landholders accessing basic landholder rights to take specified measures to protect the environment, to preserve basic landholder rights or to overcome a threat to public health under section 328 of the Act.

22 Domestic and stock rights

Note—

It is not recommended that the water from these groundwater sources be consumed without prior treatment. Land use activities may have polluted the groundwater in some areas.

- (1) At the commencement of this Plan, the water requirements of holders of domestic and stock rights are estimated to be a total of 4,000 ML/yr, comprising:
 - (a) 3,000 ML/yr in the Shepparton,
 - (b) 1,000 ML/yr in the Calivil and Renmark,
- (2) This Plan recognises that the exercise of domestic and stock rights may increase during the term of this Plan.

Note—

Increase in use of domestic and stock rights may occur as a result of an increase in the number of landholdings overlying these groundwater sources, or as a result of the increase in the exercise of basic landholder rights by existing landholders.

23 Native title rights

- (1) At the commencement of this Plan there are no holders of native title rights and therefore the water requirements for native title rights are a total of 0 ML/yr.
- (2) This Plan recognises that the exercise of native title rights may increase during the term of this Plan.

Note—

An increase in native title rights may occur as a result of the granting of native title rights under the Commonwealth's [Native Title Act 1993](#).

Part 6 Bulk access regime

24 Bulk access regime

- (1) This Part is made in accordance with section 20 (1) (e) of the Act.
- (2) This Plan establishes a bulk access regime for the extraction of water under access licences in these groundwater sources having regard to:
 - (a) the environmental water provisions established under Part 4 of this Plan,
 - (b) the requirements for basic landholder rights identified under Part 5 of this Plan, and
 - (c) the requirements for water for extraction under access licences identified under Part 7 of this Plan.
- (3) The bulk access regime established in subclause (2):
 - (a) recognises the effect of climatic variability on the availability of water as provided for under Part 3 of this Plan,
 - (b) establishes rules according to which access licences are granted as provided for in Part 8 of this Plan,

- (c) recognises and is consistent with limits to the availability of water as provided for in Part 9, Division 1 of this Plan,
- (d) establishes rules according to which available water determinations are to be made as provided for in Part 9 Division 2 of this Plan,
- (e) establishes rules according to which access licences are managed as provided for in Parts 9 and 10 of this Plan, and
- (f) establishes rules with respect to the priorities according to which access licences are to be adjusted as a consequence of any reduction in the availability of water as provided for in Part 9 of this Plan.

Part 7 Requirements for water for extraction under access licences

25 Requirements for water under access licences

This part is made in accordance with section 20 (1) (c) of the Act.

Note—

The amount of water specified in this Part represents the total volumes or total shares specified in the share components on access licence in these groundwater sources. The actual volume of water available at any time will depend on climate, access licence priority and the rules in this Plan.

25A Share components of domestic and stock access licences

It is estimated that at the time of commencement of this Plan, the share components of domestic and stock access licences authorised to extract water from these groundwater sources will total 329 ML/yr, distributed as follows:

- (a) 0 ML/yr in the Shallow Groundwater Source, and
- (b) 329 ML/yr in the Deep Groundwater Source.

25B Share components of local water utility access licences

It is estimated that at the time of commencement of this Plan, the share components of local water utility access licences authorised to extract water from these groundwater sources will total 2,210 ML/yr, distributed as follows:

- (a) 0 ML/yr in the Shallow Groundwater Source, and
- (b) 2,210 ML/yr in the Deep Groundwater Source.

Note—

Local water utility access licences at the commencement of the Plan were for the towns of Carrathool, Coleambally and Darlington Point.

25C Share components of aquifer access licences

- (1) For those *Water Act 1912* entitlements in the Shallow Groundwater Source that are to become aquifer access licences in this groundwater source at the commencement of this Plan, the share component is to be equal to the *Water Act 1912* entitlement.
- (2) It is estimated that at the time of commencement of this Plan, the share components of aquifer access licences authorised to extract water from the Shallow Groundwater Source will total 3,332 unit shares.
- (3) For those *Water Act 1912* entitlements in the Deep Groundwater Source equal to or less than 100 ML that are to become aquifer access licences in this groundwater source at the commencement of this Plan, the share component is to be equal to the *Water Act 1912* entitlement.
- (4) For each entitlement in the Deep Groundwater Source referred to in Column 1 of Schedule 5 applying to the licences listed in Column 2 of Schedule 5 that are to become aquifer access licences in this groundwater source at the commencement of this Plan, the share component is to be equal to the share component in Column 3 of Schedule 5.
- (5) For those *Water Act 1912* entitlements in the Deep Groundwater Source greater than 100 ML and not listed in Column 1 of Schedule 5 and that are to become aquifer access licences in this groundwater source at the commencement of this Plan, the share component will be established in accordance with the following formula:

$$SC_{AAL} = AV + HV$$

Where:

- (a) **SC_{AAL}** is the share component of the aquifer access licence,
- (b) **AV** is the volume required to provide asset value protection and to protect entitlements greater than 100 ML from being reduced below 100 ML and is calculated from the following formulae:

$$AV = (WAE \times 0.1857) \text{ or } 100 \text{ whichever is the greater}$$

Where **WAE** is the *Water Act 1912* entitlement,

- (c) **HV** is the history of extraction component and is calculated from the following formulae:

$$HV = (HOE_R / \sum HOE_R) \times (R - PEW - LWU - SD - \sum ESL - \sum EXC - \sum AV)$$

Where:

- (i) **HOE_R** = 0 where $HOE \leq AV$,

(ii) **HOE_R** = HOE – AV where HOE > AV

Note—

Where HOE_R = 0 the history of extraction component (HV) will also be 0.

(iii) **HOE** is as defined in subclause (6),

(iv) **R** is the amount of recharge established in clause 16 (1) (b),

(v) **PEW** is the volume of recharge reserved as planned environmental water in clause 18 (1) (c),

(vi) **LWU** is the total of local water utility access licence share components in this groundwater source at the commencement of this Plan,

(vii) **SD** is the total volume of domestic and stock access licences in the Deep Groundwater Source at the commencement of this Plan,

(viii) **ΣSL** is the total volume of all [Water Act 1912](#) entitlements that are less than or equal to 100 ML as defined in subclause (3),

(ix) **ΣEXC** is the sum of share components specified in Column 3 of Schedule 5, and

(x) **ΣAV** is the total of the asset value protection component volumes calculated under subclause (5) (b).

(6) For the purposes of subclause (5) and clause 25D HOE is equal to the greater of:

- (a) the average extraction over the seven water years from 1995/96 to 2001/02 not exceeding the [Water Act 1912](#) entitlement in 2001/02 and excluding zero and low extraction years prior to activation, or
- (b) the average extraction over the five water years from 1997/98 to 2001/02 not exceeding the [Water Act 1912](#) entitlement in 2001/02 and excluding zero and low extraction years prior to activation, or
- (c) the average extraction over the six water years from 1997/98 to 2002/03 not exceeding the [Water Act 1912](#) entitlement in 2001/02 and excluding zero and low extraction years prior to activation.

Note—

The rules for determining HOE are contained in Appendix 4.

(7) For the purposes of subclause (6) zero and low extraction years are years where extraction was less than 20% of the maximum volume of water extracted in any one year between 1995/96 and 2001/02.

- (8) For the purposes of subclause (6) activation is defined as the first year between 1995/96 and 2001/02 in which a licence holder extracted 20% or more of the maximum volume of water extracted in any one year between 1995/96 and 2001/02.
- (9) It is estimated that at the time of commencement of this Plan the share components of aquifer access licences established under subclauses (2), (3), (4) and (5) for the Deep Groundwater Source will total approximately 267,500 unit shares.

25D Share components of supplementary water access licences

- (1) Those *Water Act 1912* entitlements that are to be converted to an aquifer access licence in the Deep Groundwater Source under clause 25C (3) may also receive a supplementary water access licence.
- (2) The share component of a supplementary water access licence converted under subclause (1) will be established in accordance with the following formula:

$$SC_{SWAL} = HOE - SC_{AAL}$$

Where:

- (a) **SC_{SWAL}** is the share component for the supplementary water access licence,
 - (b) **HOE** is as defined in subclauses 25C (6), (7) and (8),
 - (c) **SC_{AAL}** is the share component of the aquifer access licence established under clause 25C (4) and (5).
- (3) It is estimated that at the time of commencement of this Plan the share components of supplementary water access licences established under subclause (1) for the Deep Groundwater Source will total 39,800 unit shares.

Note—

Not all aquifer access licences amended under clause 25C (3) will receive a supplementary water access licence. Only those licences who have a HOE as defined in subclauses 25C (6), (7) and (8) which is greater than their new Aquifer Access Licence Share component.

25E Changes to share components

- (1) This Plan recognises that the total requirements for water for extraction within these groundwater sources may change during the term of this Plan as a result of:
 - (a) the granting, surrender or cancellation of access licences, or
 - (b) the variation of local water utility access licences under section 66 of the Act.
- (2) Pursuant to section 68A of the Act the share component of each supplementary water access licence in the Deep Groundwater Source will be reduced to 0 ML on 1 July 2015.

- (3) Pursuant to section 77A of the Act supplementary water access licences will be cancelled after 1 July 2015.

Part 8 Rules for granting access licences

26 Rules for granting access licences

- (1) This Part is made in accordance with sections 20 (2) (b), 61 and 63 of the Act, having regard to the limits to water availability in these groundwater sources and the need to protect groundwater dependent ecosystems and groundwater quality.
- (2) Applications for access licences may be made and access licences granted in these groundwater sources if they are for:
- (a) a specific purpose access licence for which application is provided for under clause 19 of the *Water Management (General) Regulation 2004* (hereafter **the Regulation**) in accordance with section 61 (1) (a) of the Act,

Note—

At the commencement of this Plan, clause 19 of the Regulation provides for the following specific purpose access licences to be applied for:

- (a) a local water utility access licence (subcategory “domestic and commercial”), for the purpose of domestic consumption and commercial activities,
- (b) a domestic and stock access licence (subcategory “domestic”), for the purpose of domestic consumption,
- (c) an aquifer access licence (subcategory “town water supply”), for the purpose of supply to communities for domestic consumption and commercial activities, and
- (d) any category of specific purpose access licence (subcategory “Aboriginal cultural”), for Aboriginal cultural purposes.

Note—

Pursuant to sections 66 (3) and 66 (4) of the Act, the Minister may also vary a local water utility’s share component at 5 year intervals, or on application of the local water utility where there is rapid growth in population.

- (b) an access licence with a zero share component in accordance with sections 61 (1) (b) and 63 (5) of the Act,
- (c) an access licence that may be granted in accordance with a dealing that is permitted by Part 11 of this Plan,
- (d) an aquifer (community and education) access licence, or
- (e) an access licence within the Shallow Water Source that accesses water from less than 20 metres below the ground surface and, in the opinion of the Minister, are in areas where the water table has risen, and lowering of the water table is required, and only if the sum of all access licence share components in the Shallow Water

Source remain below 10,000.

- (3) In applying for a new access licence, the applicant must establish the purpose and circumstances relating to that access licence, and that the share and extraction component sought will be the minimum required to meet that purpose and circumstance.
- (4) Access licences granted under this Part cannot be used to extract water through a water supply work (bore) located in areas where the extraction authorised by the access licence plus the full extraction authorised by existing access licences nominating water supply works (bores) located in the area and the exercise of basic landholder rights, are likely to cause an adverse local impact, as outlined in Part 10 Division 3 of this Plan.
- (5) An access licences may be granted in this water source where:
 - (a) a [Water Act 1912](#) licence was not converted at the commencement of this plan, or
 - (b) a licence is found to be taking water from a groundwater source in this plan but has been incorrectly identified as taking water from another groundwater source and the licence is cancelled in the other groundwater source.
- (6) Aquifer access licences granted under subclause (5) shall be subject to the rules specified in clauses 25C and 25D.

Part 9 Limits to the availability of water

Division 1 Long-term average extraction limits

27 Extraction limits

- (1) This Division is made in accordance with section 20 (2) (a) of the Act.
- (2) The extraction limit for each groundwater source each year of this Plan is the recharge established in clause 16, minus the proportion of recharge reserved as planned environmental water in clause 18, plus total water made available to supplementary water access licences under clause 29, plus the total requirements for basic landholder rights at the commencement of this plan, and are initially as follows:
 - (a) 10,000 ML/yr in the Shallow Groundwater Source, plus the total requirements for basic landholder rights at the commencement of this plan, and
 - (b) 270,000 ML/yr in the Deep Groundwater Source, plus total water made available to supplementary water access licences under clause 29, plus the total requirements for basic landholder rights at the commencement of this plan.

28 Variation of extraction limits

- (1) The Minister may under section 45 (1) (b) of the Act amend clause 27 after 30 June 2011 to vary the extraction limit in accordance with:
 - (a) any change to the average annual recharge arising from clause 16 (2), or
 - (b) any change to the environmental health water arising from clause 18 (2).
- (2) If the extraction limit is amended under subclause (1) then:
 - (a) the extraction limit will not be greater than 390,000 ML/yr in the Deep Groundwater Source, plus the total water allocations made to supplementary water access licences under clause 29, plus the total requirements for basic landholder rights at the commencement of this plan, and
 - (b) the extraction limit will not be less than 230,000 ML/yr in the Deep Groundwater Source, plus the total water allocations made to supplementary water access licences under clause 29, plus the total requirements for basic landholder rights at the commencement of this plan.

28A Compliance with extraction limits

- (1) Water extraction in these groundwater sources will be monitored each water year to determine if there is any growth in volume extracted above the extraction limit specified in clause 27, based on a comparison of the extraction limit against the average extraction within each groundwater source over that year and the preceding 2 years.

Note—

Growth in extractions may occur due to the granting of new licences in accordance with Part 8 of this Plan.

- (2) For the purposes of auditing compliance with the extraction limit, if water that:
 - (a) pursuant to an access licence is committed as adaptive environmental water to be left in the aquifer for environmental purposes, then extraction will be assumed to be equal to 100% of the available water determination made under clause 29, or
 - (b) pursuant to an access licence is committed as adaptive environmental water to be extracted for environmental purposes, then extraction will be that measured through the approved water supply work (bore).
- (3) If the 3 year average of extraction in a groundwater source exceeds the extraction limit established in clause 27 by 5% or greater, then the available water determination made for aquifer access licences under clause 29 (6) for the following water year, should be reduced by an amount that is assessed necessary by the Minister to return subsequent total water extraction to the extraction limit for that groundwater source.

Division 2 Available water determinations

29 Available water determinations

- (1) This Division is made in accordance with section 20 (2) (b) of the Act.
- (2) Pursuant to section 58 (4) of the Act this plan amends the relative priorities of the categories of aquifer access licence and supplementary water access licence to the extent necessary to legally make the available water determinations as set out in this clause.
- (3) All available water determinations in these groundwater sources shall be expressed as either:
 - (a) a percentage of the share component for all access licences where share components are specified as megalitres per year, or
 - (b) megalitres per unit of share component for all access licences where share components are specified as a number of shares.
- (4) An available water determination for each category of access licence in these groundwater sources should be made at the commencement of each water year.
- (5) The available water determinations made at the commencement of the water year for domestic and stock and local water utility access licences should be 100% of share components.
- (6) The available water determination made at the commencement of the water year for aquifer access licences should be such that the total of available water determinations under this clause for each groundwater source equals the extraction limit set in clause 27 (2) as varied by clause 28 minus the total requirements for basic landholder rights, minus the total available water determinations for domestic and stock and local water utility access licences and supplementary water access licences, or such lower amount as results from the operation of clause 28A (3) or subclause (7).
- (7) The available water determination for all aquifer access licences in the Shallow Groundwater Source will not exceed 1 ML per unit of share component.
- (8) The available water determination made at the commencement of this plan for supplementary water access licences should be 0.9 ML per unit of share component.
- (9) The available water determination made at the commencement of each year after the 2006/07 water year for supplementary water access licences will be reduced by a further 0.1 ML per unit of share component, and
- (10) The available water determination for supplementary water access licences will be reduced to 0 ML per unit of share component at the commencement of the 2015/16 water year.

Note—

Subclauses (9) and (10) means that allocations for supplementary water access licences will diminish each year by 0.1 ML per unit share. For example, the available water determination for the 2006/07 water year is 0.9, the 2007/08 water year is 0.8, the 2008/9 water year is 0.7, the 2009/10 water year is 0.6, the 2010/11 water year is 0.5, the 2011/12 water year is 0.4, the 2012/13 water year is 0.3, 2013/14 water year is 0.2, the 2014/15 water year is 0.1, and the 2015/16 water year is 0.

Part 10 Rules for managing access licences

Division 1 General

30 Rules for managing access licences

This Part is made in accordance with sections 20 (2) (b), 21 (a) and 21 (c) of the Act, having regard to:

- (a) the environmental water rules established in Part 4 of this Plan,
- (b) requirements for water to satisfy basic landholder rights identified in Part 5 of this Plan, and
- (c) requirements for water for extraction under access licences in Part 7 of this Plan.

Division 2 Water allocation account management

31 Water allocation account management

This Division is made in accordance with sections 20 (2) (b) and 21 (c) of the Act.

32 Water allocation accounts

In accordance with section 85 of the Act, a water allocation account shall be established for each access licence in these groundwater sources.

Note—

Water allocation may be assigned to, or from, these accounts by a water allocation assignment made under section 71T of the Act, where these are allowed under rules specified in Part 11 of this Plan.

33 Accrual of water allocations

Water allocations will be accrued into these water allocation accounts each water accounting year in accordance with the Minister's available water determinations as specified in clause 29.

34 Annual accounting for water extraction

- (1) Water taken from these groundwater sources will be accounted for at least annually.
- (2) Water taken by a water supply work (bore) nominated by an access licence will be periodically debited against the access licence water allocation account.

- (3) A water allocation account shall remain at or above zero at all times.
- (4) Unused water allocations in the water allocation accounts of domestic and stock access licences or of local water utility access licences or supplementary water access licences cannot be carried over from one water year to the next.
- (5) In any water year, subject to local impact management restrictions arising from Part 10, Division 2 of this Plan, water taken under a local water utility access licence or a domestic and stock access licence, or a supplementary water access licence, and total water in any water allocation account associated with such an access licence at any time may not exceed a volume equal to:
 - (a) 100% of the share component of the access licence,
 - (b) plus any water allocations assigned from another access licence under section 71T of the Act in that year,
 - (c) plus any water allocations re-credited in accordance with section 76 of the Act in that year, and
 - (d) minus any water allocations assigned to another licence under section 71T of the Act in that year.
- (6) Unused water allocations in the water allocation accounts of aquifer access licence may be carried over from one water year to the next, subject to subclause (7).
- (7) The maximum amount of unused water allocations that can be carried over under subclause (6) is equal to 2 ML per unit of share component.
- (8) In any water year, subject to local impact management restrictions arising from Part 10, Division 2 of this Plan, water taken from these groundwater sources under an aquifer access licence may not exceed a volume that is equal to:
 - (a) 2 ML per unit of aquifer access licence share component,
 - (b) plus any water allocations assigned from another access licence under section 71T of the Act in that year, and
 - (c) minus any water allocations assigned to another access licence under section 71T of the Act in that year.
- (9) Total water in any aquifer access licence water allocation account at any time may not exceed a volume that is equal to:
 - (a) 3 ML per unit of aquifer access licence share component,
 - (b) plus any water allocations assigned from another licence under section 71T of the Act in that year,

(c) minus any water allocations assigned to another licence under section 71T of the Act in that year.

(10) In any water year, subject to local impact management restrictions arising from Part 10, Division 2 of this Plan, water taken from these groundwater sources under a supplementary water access licence may not exceed the allocation resulting from the available water determination.

(11) Where both an aquifer access licence and a supplementary water access licence nominate the same water supply works and use approval, water allocations will be debited from a supplementary water access licence water allocation account before water is debited from an aquifer access licence water allocation account.

Division 3 Management of local impacts

35 Management of local impacts

This Division is made in accordance with section 21 (a) of the Act.

36 Water level management

- (1) The Minister may declare that, in order to protect water levels within these groundwater sources, local access rules are to apply in a defined area known as a local impact area.
- (2) Local extraction restrictions will first apply once contoured drawdown or recovery depths exceed trigger levels specified by the Minister for 2 or more successive years, or unacceptable levels of drawdown or recovery specified by the Minister are observed in a single year.
- (3) Local extraction restrictions will apply to such an extent and for such time as to reduce the rate of pressure decline, or in response to unacceptable seasonal drawdown or recovery, to ensure pressure recovery occurs to acceptable levels.
- (4) Local extraction restrictions may increase to prevent unacceptable seasonal drawdown and unacceptable recovery levels, as specified by the Minister.
- (5) In the Shallow Groundwater Source, if the depth to the watertable outside areas where the water table has risen unnaturally, and its lowering is required, is identified as having a declining trend to the extent that local ecosystems could be adversely impacted upon by the 2015/16 water year, then a review of extraction by access licence holders in the affected area will be undertaken.
- (6) If the review in subclause (5) reveals it is required, extraction will be restricted in the local impact area to such an extent and for such a time as required to stabilise and if necessary restore the watertable to an appropriate level, as determined by the Minister.

(7) This clause does not apply to local water utility access licences.

Note—

This clause recognises that in some locations, at certain periods of high groundwater demand, critical water level declines may occur, and that additional extraction limitations may be required.

Groundwater pressures are referenced to the top of the relevant aquifer. A local impact area is to be identified from a map of the piezometric surface change, showing seasonal, annual or longer patterns of drawdown or recovery in an aquifer.

37 Water quality management

(1) The beneficial uses of these groundwater sources, based on the beneficial use classes identified in the Australian and New Zealand Environment and Conservation Council *Water Quality Guidelines 2001*, and the National Health and Medical Research Council *Raw Water for Drinking Purposes Guidelines 1996*, are

- (a) ecosystem protection and agricultural water for the Shallow Groundwater Source, and
- (b) raw water for drinking, ecosystem protection and agricultural water for the Deep Groundwater Source.

Note—

It is not recommended that the groundwater from these groundwater sources be consumed without prior treatment. Land use activities may have polluted the groundwater in some areas.

- (2) Water quality decline will be deemed unacceptable if extraction is likely to cause water quality to decline to a lower beneficial use class.
- (3) The Minister may declare that, in order to protect water quality within these groundwater sources, local access rules are to apply in a defined area known as a local impact area.
- (4) If unacceptable water quality declines are occurring, extraction from all water supply works (bores) within a local impact area declared under subclause (3) that are nominated by an access licence will be restricted to such an extent and for such a time as is required to halt that decline, or restore the beneficial uses of these groundwater sources.

38 Protection of groundwater dependent ecosystems

- (1) High priority groundwater dependent ecosystems are listed in Schedule 4.
- (2) Pursuant to section 45 (1) (b) of the Act, the Minister may identify further high priority groundwater dependent ecosystems and include them in Schedule 4 after 30 June 2011, based on further studies of groundwater ecosystem dependency undertaken by the Minister.

- (3) The Minister should consult with the Minister for the Environment before adding further high priority groundwater dependent ecosystems to Schedule 4.
- (4) Extraction of groundwater from a new or replacement water supply work (bore) is excluded within 200 metres of designated high priority groundwater dependent ecosystems, or any creek or river, for those exercising basic landholder rights, and 1,000 metres for extraction authorised by all other access licences, unless the water supply work (bore):
 - (a) only draws water from an aquifer at depths as approved by the Minister, and
 - (b) has an impermeable seal constructed within the annulus of the bore to isolate aquifers preventing water ingress from the restricted aquifer, as specified by the Minister.
- (5) Subclause (4) will not apply to extraction from an existing water supply work (bore) until such time as the work is replaced.

39 Protection of aquifer integrity

- (1) The Minister may declare that, in order to protect the integrity of the aquifers within these groundwater sources, local access restrictions are to apply in a defined area known as a local impact area.
- (2) The Minister may, on presentation of evidence of land subsidence or aquifer compaction, restrict extraction from all water supply works (bores) within a local impact area declared under subclause (1), that are nominated by an access licence, to such an extent and for such time as to stabilise that subsidence or compaction.

Note—

This clause recognises that damage of aquifers through excessive water storage loss is irreversible, and destroys the resource for future water users, including the environment.

40 Extraction restrictions

The Minister may, in the event of local impact restrictions arising from this Division, impose by Order a reduction in annual, quarterly, monthly, weekly or daily extraction rates from water supply works (bores) in the affected area.

41 Group registration

This Plan allows for the formation of a group of access licences with respect to the sharing of local impact restrictions arising from this Division, subject to the following rules:

- (a) the group register will be maintained by the Minister,
- (b) holders of access licences must make a request to the Minister to form a group,
- (c) total extraction by all access licences within a group will be assessed as a whole

against their combined restricted extraction and must not exceed that amount,

- (d) no access licence holder within the group may extract more than is permitted by Division 2 of this Part in any one water accounting year as a result of participation in a group,
- (e) an access licence holder may apply to be removed by the Minister from the group and the extraction by the group will be reduced by the extraction restriction of that access licence,
- (f) an access licence holder may apply to be added by the Minister to the group and the combined restricted extraction of the group will be increased by the extraction restriction of that access licence, and
- (g) the Minister reserves the right to remove a licence holder from a group where that individual causes the group extraction restriction to be exceeded, or to dissolve a group where its members exceed their combined extraction restriction.

42 Infrastructure failure

- (1) The operational rules relating to local impact management may rely on water levels at specified monitoring bores.
- (2) In the event of a monitoring bore failure the Minister may:
 - (a) continue with the current access rules until the monitoring bore is reinstated,
 - (b) adjust the current access rules based on climatic conditions and any other monitoring bore information, until the monitoring bore is reinstated, or
 - (c) rely on another monitoring bore in the area to provide information.

Part 11 Access licence dealing rules

43 Access licence dealing rules

- (1) This Part is made in accordance with section 20 (1) (d) of the Act and with the Minister's access licence dealing principles gazetted under section 71Z of the Act.
- (2) Applications for access licence dealings may be granted subject to the Minister's access licence dealing principles gazetted from time to time under section 71Z of the Act and the rules in this Part.

Note—

There are a number of mechanisms within the Act, called access licence dealings, to change either the ownership of all or part of an access licence, or the location within a water source at which all or part of the share and extraction components of access licences can be exercised. These dealings are governed by the principles in section 5 of the Act, Minister's access licence dealing principles, and the rules in this Part.

Note—

Where there is an inconsistency between access licence dealing rules established in this Plan and Minister's access licence dealing principles gazetted subsequent to the commencement of this Plan, section 71Z of the Act provides for the Minister's access licence dealing principles to prevail.

44 Rules relating to constraints within a groundwater source

- (1) This clause applies to any relevant dealings under sections 71Q, 71S, and 71W of the Act, and section 71T of the Act with respect to water allocation assignments within a groundwater source.
- (2) Dealings are prohibited under this clause if:
 - (a) any of the access licences or water allocations involved are not within these groundwater sources,
 - (b) the dealing would result in the total extraction under access licences through nominated works in an area, plus basic landholder rights extraction, causing any adverse local impact in accordance with Part 10 Division 3 of this Plan, or
 - (c) the dealing involves a supplementary water access licence, or any water allocation credited to a supplementary water access licence water allocation account.

45 Rules for change of water source

- (1) This clause relates to dealings under section 71R of the Act.

Note—

Section 71R dealings are the mechanism by which access licences can move from one water source to another. Once the change in water source has been effected, if permitted, the new licence will have to nominate specified works (by a dealing under section 71W of the Act) in the receiving water source before extraction can commence.

- (2) Dealings under this section 71R of the Act that change the water source to which an access licence applies are prohibited in these groundwater sources, except as provided for in this clause.
- (3) An access licence with a share component specifying one of these groundwater sources may be cancelled and a new licence issued specifying another of these groundwater sources only if the total share components of all access licences in the groundwater source in which the access licence is to be issued remains below:
 - (a) for the Shallow Groundwater Source: the recharge established in clause 16 (1) (a) minus the proportion of recharge reserved for the environment in clause (18) (1) (b),
 - (b) for the Deep Groundwater Source: the recharge established in clause 16 (1) (b) minus the proportion of recharge reserved for the environment in clause (18) (1) (b).

(c), minus total volume of share components for domestic and stock access licences established in clause 25A (b), minus the volume or share components for local water utilities as established clause 25B (b).

(4) The volume of the share component on a licence issued under a dealing provided for in subclause (3) is to be the volume of the cancelled access licence share component.

46 Rules for conversion of access licence category

(1) This clause relates to dealings under section 71O of the Act.

(2) Dealings that result in conversion of an access licence of one category to an access licence of another category are prohibited in these groundwater sources.

47 Rules for interstate access licence transfer

(1) This clause relates to dealings under section 71U of the Act.

(2) Dealings that result in an interstate access licence transfer into or out of these groundwater sources are prohibited.

48 Rules for water allocation assignments between water sources

(1) This clause relates to dealings under section 71T of the Act.

(2) Dealings that assign water allocations between access licences in other water sources and access licences in these groundwater sources are prohibited.

(3) Dealings that assign water allocations between an access licence in one of these groundwater sources and an access licence in another of these groundwater sources may be permitted only if:

(a) the total water allocations credited to all access licences in the groundwater source to which the water allocation is assigned remain below the extraction limit of that groundwater source established in clause 27, and

(b) the assignment would not result in the total extraction of credited water allocations through nominated works in an area, plus basic landholder rights extraction, causing any adverse local impact in accordance with Part 10 Division 3 of this Plan,

(c) the assignment is not from or to a supplementary water access licence.

Note—

Each water allocation assignment must be applied for. access licence holders may enter into private contracts to assign water allocations for a number of years. Such contracts are not guaranteed by the Government, and approval must be sought annually. Approval will be subject to the rules in this Plan, including local impact assessment.

49 Rules for interstate assignment of water allocations

- (1) This clause relates to dealings under section 71V of the Act.
- (2) Dealings that result in an interstate assignment of water allocations to or from these groundwater sources are prohibited.

Part 12 Mandatory conditions

50 Mandatory conditions on access licences

This Part is made in accordance with sections 17 (c) and 20 (2) (e) of the Act.

51 Access licence conditions

- (1) All access licences shall have mandatory conditions to give effect to the provisions of this Plan in relation to the following:
 - (a) the specification of the share component of the access licence,
 - (b) the specification of the extraction component of the access licence,
 - (c) the requirement that all taking of water under the access licence will be subject to the available water determinations,
 - (d) the requirement that all taking of water under the access licence will be subject to any local impact management restrictions established in this Plan,
 - (e) the requirement that all taking of water under the access licence will be subject to the account management rules established in this Plan,
 - (f) the requirement that water may only be taken under the access licence by the water supply work (bore) nominated by the access licence,
 - (g) the taking of water in accordance with the access licence may only occur if the resulting debit from the access licence water allocation account will not exceed the volume of water allocation remaining in the account, and
 - (h) any other conditions required to implement the provisions of this Plan.
- (2) All supplementary water access licences shall have mandatory conditions to give effect to clause 25E (2) and (3), in relation to the amendment of access licence share components.
- (3) All local water utility access licences shall have mandatory conditions that only allow the taking of water for the exercise of a water supply function of the local water utility or for other such purpose provided for under the Act.
- (4) All access licences shall have mandatory conditions to give effect to clauses 36, 37

and 38, in relation to water level management, water quality management and protection of groundwater dependent ecosystems.

52 Mandatory conditions on water supply work (bore) approvals

All approvals for a water supply work (bore) to which this Plan applies shall have mandatory conditions in relation to the following:

- (a) the water supply work (bore) is only to be constructed by a driller licensed under section 349 of the Act,
- (b) the water supply work (bore) must comply with drilling standards as specified by the Minister,
- (c) construction of a water supply work (bore) must prevent contamination between aquifers through proper bore construction,
- (d) a water supply work (bore) approval holder must ensure decommissioning procedures comply with applicable standards as specified by the Minister,
- (e) a new or replacement water supply work (bore) to access water for basic rights will be required, as a condition of approval, to be constructed to sufficient depth to maintain access to the water source for the life of the work,
- (f) the water supply work (bore) approval holder is, within 2 months of completion of the work, or after the issue of the approval if the water supply work (bore) is existing, to provide the Minister with:
 - (i) details of the work on the prescribed form,
 - (ii) a plan showing accurately the location of the work in relation to portion and property boundaries, and
 - (iii) details of any water analysis and/or pumping tests required by the Minister,
- (g) if during the construction of the water supply work (bore), saline or contaminated water is encountered above the producing aquifer, such water is to be sealed off by:
 - (i) inserting the appropriate length(s) of casing to a depth sufficient to exclude the saline or contaminated water from the work, and
 - (ii) placing an impermeable seal between the casing(s) and the walls of the bore hole from the bottom of the casing to ground level, as specified by the Minister,
- (h) if a water supply work (bore) is abandoned, the water supply work (bore) approval holder is to:
 - (i) notify the Minister that the work has been abandoned, and

- (ii) seal off the aquifer by backfilling the work to ground level after withdrawing the casing (lining), as specified by the Minister,
- (i) an extraction measurement device shall be installed and maintained on each water supply work (bore) used for extraction of water under an access licence, and such device shall be of a type, and shall be maintained in a manner, which is acceptable to the Minister,
- (j) a water supply work (bore) must comply with the relevant local impact management rules in Part 10 of this Plan,
- (k) notwithstanding the available water determination, it is the responsibility of the water supply work (bore) approval holder to ascertain from the Minister whether or not there are in place any local impact restrictions before commencing to take water from these groundwater sources,
- (l) extraction under an access licence through the approved water supply work (bore) is only authorised with respect to the access licences specified on the water supply work (bore) approval,
- (m) a water supply work (bore) approval holder must supply to the Minister on request, and to the required standards, a report pertaining to the quality of the water obtained from the water supply work (bore), and
- (n) any other conditions required to implement the provisions of this Plan.

Note—

It is recommended that the Minister also apply conditions to water use approvals requiring the supply of information on an annual basis on types and areas of irrigated crops.

Part 13 Monitoring and reporting

53 Monitoring

The monitoring of the performance indicators specified in clause 13 shall be undertaken by the Minister.

Note—

Review and Audit of this Plan

In accordance with section 43A of the Act, the Natural Resources Commission must undertake a review of this Plan prior to any decision to extend its term or to make a new plan. The review must consider the extent to which the Plan's water sharing provisions have contributed to achieving or not achieving the relevant natural resource management standards and targets in the catchment management area (as referred to in section 5 of the [Catchment Management Authorities Act 2003](#)).

When undertaking this review the Natural Resources Commission is required to call for public submissions. The Commission will take into consideration any submission received as well as any other relevant State-wide or regional government policies or agreements that apply to the catchment management area.

In accordance with section 44 of the Act, this Plan will be audited at intervals of no more than five years, for the purpose of ascertaining whether its provisions are being given effect to. This audit is to be carried out by an audit panel appointed by the Minister in consultation with the water management committee, where one exists.

Note—

The Implementation Program

In accordance with section 51 of the Act, the Minister may establish an Implementation Program that sets out the means by which the provisions of this Plan are to be achieved.

It is proposed that the Minister establish an Implementation Program for this Plan. Pursuant to section 51 (5) of the Act, the Implementation Program is to be reviewed annually by the Minister to determine whether it is effective in implementing this Plan.

The results of the review of the Implementation Program will be included in the annual report for the Department.

Part 14 Amendment of this Plan

54 Amendment of this Plan

- (1) This Part is made in accordance with section 45 (1) (b) of the Act.
- (2) This Plan can be amended in accordance with the following clauses of this Plan:
 - (a) clause 16 in respect to average annual recharge,
 - (b) clause 18 in respect to planned environmental water,
 - (c) clause 28 in respect to long-term average extraction limits,
 - (d) clause 34 in respect to the water allocation account management rules, or
 - (e) clause 38 in respect to high priority groundwater dependent ecosystems.

55 Amendment relating to planned environmental water

- (1) The Minister may amend this Plan to provide for the recovery of planned environmental water as follows:
 - (a) the recovery is only to apply where the Minister has cancelled an access licence held by the Minister in accordance with section 8A of the Act,
 - (b) the amount of additional water to be provided as planned environmental water is to be equivalent to the annual average extraction of water under the cancelled licence over the long-term,
 - (c) the average annual long-term availability of water for the remaining access licences that relate to the water source concerned is to be reduced by the average annual long-term extraction of water under the cancelled licence.
- (2) The Minister may amend this Plan to specify the purposes for which planned

environmental water committed under section 8A of the Act is to be used.

Dictionary

The following definitions apply to this Plan in addition to the definitions set out in the Act:

abandoned (work) refers to a water supply work (bore) that is no longer being used.

aquifer compaction refers to the reduction in the porosity (pore spaces) of an aquifer, and may result from over pumping the aquifer.

available head is the difference between the depth to the top of the target aquifer, and an initial piezometric level.

available water in relation to a water management area or water source, is the water that is available in that area or water source in accordance with an available water determination that is in force in respect of that area or water source.

available water determination is a written Order by the Minister as to the availability of water for the various categories of access licence in relation to a specified water management area or water source.

Note—

An available water determination gives rise to a water allocation that is credited to a water allocation account for each licensed holder.

bedrock is the solid rock underlying unconsolidated sediments such as the soil and weathered rock. Bedrock is a general term for solid rock that lies beneath soil, loose sediments, or other unconsolidated material.

buffer zone is an area surrounding a groundwater dependent ecosystem or other feature (such as an area of low quality) within which extraction, or the impact of extraction, is restricted.

contoured drawdown or recovery depths refers to spatial water levels data indicating drawdown or lack of recovery.

drawdown refers to a lowering of the level to which water will rise in cased bores. Natural drawdown may occur due to seasonal climatic changes. Groundwater pumping may also result in seasonal and long-term drawdown.

extraction limit is the amount of the long-term average annual recharge and storage that can be extracted, on average, each water accounting year.

groundwater is water that occurs beneath the ground surface in the saturated zone.

groundwater dependent ecosystems are ecosystems which have their species composition and natural ecological processes wholly or partially determined by groundwater.

long term average storage component is the volume of water in the aquifer less the combined average annual recharge and requirements for basic rights at the commencement of this plan, and exceeds the requirements for supplementary access provided for in this Plan.

monitoring bore refers to a bore constructed for the purpose of measuring water levels and/or taking samples for water quality analysis.

piezometric surface (potentiometric surface) is a surface that represents the level to which water will rise in cased bores. (The watertable is the potentiometric surface of an unconfined aquifer).

recharge is the addition of water, usually by infiltration, to an aquifer.

recovery depths see contoured drawdown

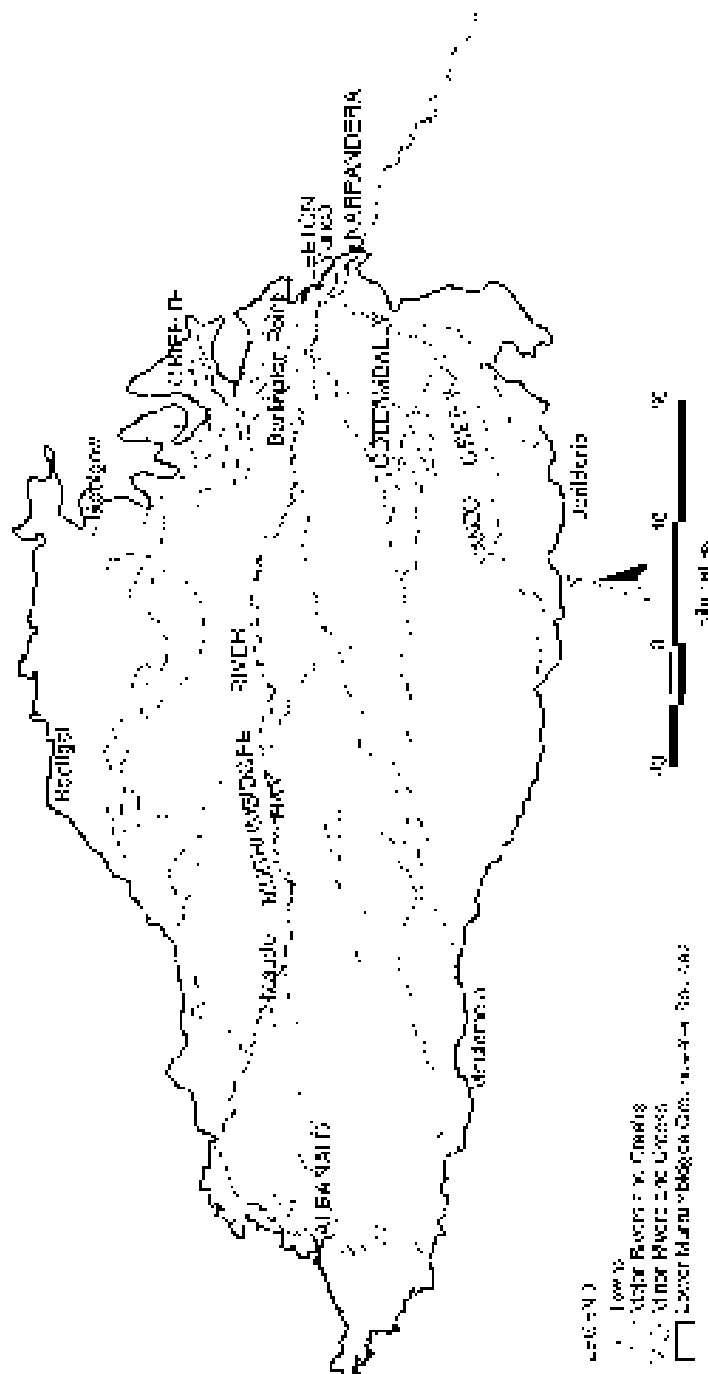
share component is the share component of an access licence.

unconsolidated alluvial aquifers are aquifers formed by sediment deposited by the action of flowing water in particular along river beds and floodplains, but not including lakes and seas.

water year is a 12 month period from 1 July to 30 June.

watertable is the upper surface of an unconfined aquifer.

Schedule 2 Lower Murrumbidgee Groundwater Sources



Schedule 3 Contribution to targets in the State Water Management Outcomes Plan

Level of assessed contribution:

FULL—contributes to target in full

HIGH—while not fully contributing to target, there is a good level of contribution

PARTIAL—goes some way to contributing to the target

LOW—only small degree of contribution to target

Relevant target	Level of contribution	Comments
<p>Target 1e The long term average annual extractions for groundwater limited (or being phased down) to an ecologically sustainable level (the Sustainable Yield) as determined by detailed assessment of each groundwater source and consultation with the relevant management committee. In the absence of such an assessment, the following to apply: 100 percent of average annual recharge for a groundwater source where there is no significant ecosystem dependency; 70 percent of average annual recharge where there is significant ecosystem dependency</p>	FULL	<ul style="list-style-type: none"> This Plan establishes an extraction limit that is equal to 15% of recharge in the Shallow groundwater source, and phases extraction down to 80% of recharge in the Deep groundwater source.
<p>Target 1f Rules for adjustments to future available water determinations in the event that the extraction limits are exceeded, clearly prescribed in consultation with the relevant management committee, and acted upon</p>	FULL	<ul style="list-style-type: none"> Rules set out in Part 9.
<p>Target 2 All management plans incorporating mechanisms to protect and restore aquatic habitats, and the diversity and abundance of native animals and plants, with particular reference to threatened species, populations and communities and key threatening processes</p>	HIGH	<ul style="list-style-type: none"> This Plan also prohibits new or replacement extraction bores within 1000 metres (or 200 metres for basic landholder rights bores) of any designated high priority dependent groundwater ecosystems (Schedule 4 which nominates prior streams) or any creek or river. Part 10 sets out local impact management rules in response to local groundwater pressure or level declines, and groundwater quality impacts.

<p>Target 5 Access rights for water access licensees clearly and legally specified in terms of share and extraction components</p>	<p>HIGH</p>	<ul style="list-style-type: none"> • This Plan establishes transparent extraction limits and allocation/account rules. • Licences are tradeable. • The local extraction rules means that future rights will not be exclusive but affected by the future location of works. Licences with existing bores will have priority over licences requiring new bores.
<p>Target 6a For groundwater sources, the total volume of water specified on access licences reduced over the term of a water sharing plan to no more than 125 percent of the Sustainable Yield</p>	<p>FULL</p>	<ul style="list-style-type: none"> • At the commencement of the Plan total licence volumes for the Deep groundwater source will be greater than the extraction limit. • However, total licence volumes are reduced to 100% of the sustainable yield over the term of the Plan.
<p>Target 10 Degree of connectivity between aquifers and rivers assessed, and zones of high connectivity mapped to enable baseflows to the river to be maintained or improved</p>	<p>HIGH</p>	<ul style="list-style-type: none"> • There is little information in available on connectivity. • However, baseflows should be protected by limiting extraction to 15% of recharge. • This Plan also prohibits new or replacement extraction bores within 1000 metres (or 200 metres for basic landholder rights bores) of any creek or river.

<p>Target 11 Groundwater dependent ecosystems identified and mapped for all priority aquifers, and the ecological water requirements assessed to enable local groundwater extraction rates and/or Sustainable Yields to be reviewed</p>	<p>HIGH</p>	<ul style="list-style-type: none"> • The ecosystems directly dependent on the Shallow Groundwater Source, but not on the Deep Groundwater Source, are listed in Schedule 4. • They should be protected by limiting extraction to 15% of recharge. • This Plan also prohibits new or replacement extraction bores within 1000 metres (or 200 metres for basic landholder rights bores) of any designated high priority dependent groundwater ecosystems (Schedule 4 which nominates only prior streams) or any creek or river. • Part 10 sets out local impact management rules in response to local groundwater pressure or level declines, and groundwater quality impacts.
<p>Target 12 Measures in place in all water sources subject to a gazetted water sharing plan to protect domestic and stock rights from the impact of other water access and use</p>	<p>HIGH</p>	<ul style="list-style-type: none"> • This Plan has identified the volumes necessary to meet basic domestic and stock requirements. • It also protects domestic and stock bores from interference from higher yielding bores.
<p>Target 13 The knowledge sharing, training and resources necessary to ensure that Aboriginal people have the capacity to be effectively involved in water management identified and addressed</p>	<p>PARTIAL</p>	<ul style="list-style-type: none"> • An aboriginal community representative has been involved in development of this Plan.
<p>Target 14 Water sources, ecosystems and sites of cultural or traditional importance to Aboriginal people identified, plans of management prepared, and measures put in place to protect and improve them</p>	<p>PARTIAL</p>	<ul style="list-style-type: none"> • No Aboriginal cultural or traditional sites or requirements have been identified. • The environmental health provisions should protect dependent ecosystems of importance to Aboriginal people.
<p>Target 16a All share components of access licences tradeable</p>	<p>FULL</p>	<ul style="list-style-type: none"> • Licence volumes and water allocations are tradeable.
<p>Target 16e Any unassigned access rights identified and clear mechanisms established for their future assignment</p>	<p>FULL</p>	<ul style="list-style-type: none"> • This Plan established rules for the granting of new licences.

<p>Target 16f Zones established where necessary for environmental protection and limits/constraints on water dealings in them made explicit</p>	HIGH	<ul style="list-style-type: none"> This Plan also prohibits new or replacement extraction bores within 1000 metres (or 200 metres for basic landholder rights bores) of any designated high priority dependent groundwater ecosystems (Schedule 4 which nominates only prior streams) or any creek or river.
<p>Target 35 All management plans incorporating water quality objectives that have considered Government approved Interim Environmental Objectives, the current Australian and New Zealand Environment and Conservation Council Guidelines and the recommendations of relevant Healthy Rivers Commission Inquiries</p>	HIGH	<ul style="list-style-type: none"> This Plan includes a water quality objective, and establishes rules to protect water quality. This Plan is explicit about the beneficial uses and criteria.
<p>Target 38 Aquifer water quality vulnerability zones mapped and extraction limits reviewed to reduce the risk of lateral intrusion of poor quality water</p>	PARTIAL	<ul style="list-style-type: none"> No vulnerability mapping of area is referenced in this Plan. This Plan includes rules for managing the impacts of extraction on water quality.

Schedule 4 High priority groundwater dependent ecosystems

High priority groundwater dependent ecosystems in the Lower Murrumbidgee Groundwater Sources are, 'Prior streams' as shown on Sheet 1 of 3 drawings accompanying in the *Murrumbidgee Local Environment Plan 1994*.

Note—

The high priority groundwater dependant ecosystems listed in this Schedule may change during the period of this Plan. The offices of the Department of Land and Water Conservation, shown in Appendix 2, should be contacted for a current list.

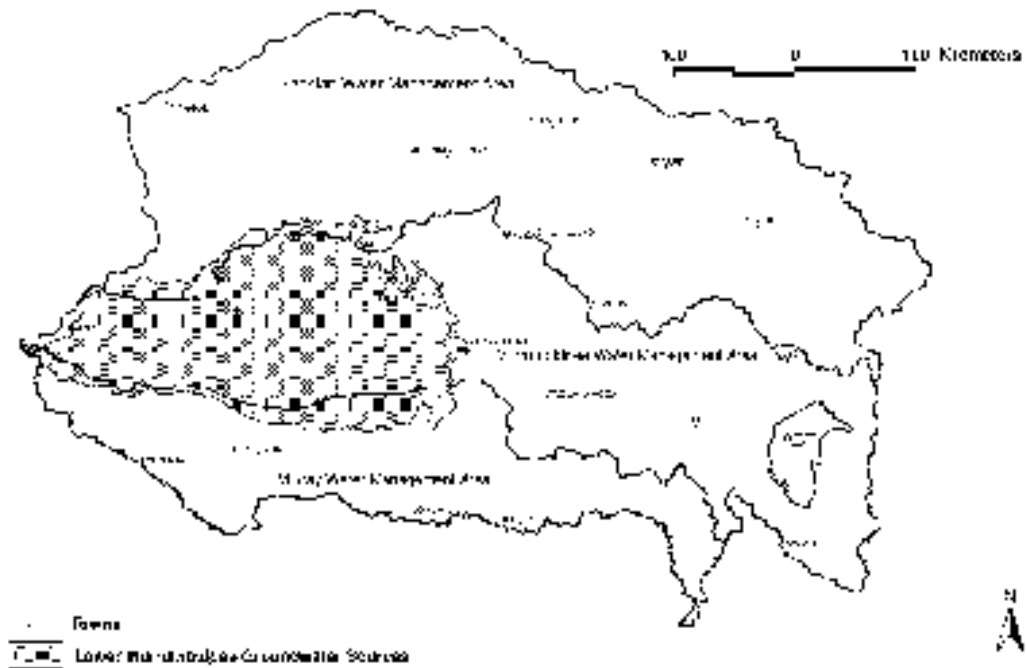
Schedule 5 Aquifer access licence share component

(Clauses 25C (4) and 25C (5))

Column 1	Column 2	Column 3
Water Act Entitlement	Licence(s)	Aquifer Access Licence Share Component
40PT930061	40BL186295, 40BL190019	2405
40PT930572	40BL189576	1028
50PT940188	50BL196102, 50BL196791	3120
40PT930427	40BL186604	925

Appendix 1 Murrumbidgee, Lachlan and Murray Water Management

Areas



Appendix 2 Location of maps

The maps in relation to this Plan may be inspected at:

Regional Office
Department of Land and Water Conservation
43 Johnston Street
WAGGA WAGGA NSW 2650

District Office
Department of Land and Water Conservation
Chelmsford Place
LEETON NSW 2705

District Office
Department of Land and Water Conservation
8-20 Edwardes Street
DENILQUIN NSW 2710

District Office
Department of Land and Water Conservation
126 Lachlan Street
HAY NSW 2711

Appendix 3 Performance indicators

Performance indicators for the Lower Murrumbidgee Groundwater Sources Water Sharing Plan

Performance indicator	Related objectives	As measured by	Commentary
(a) Change in groundwater extraction relative to the extraction limits.	11 (a), 11 (b) and 11 (c)	<ul style="list-style-type: none"> Average annual extraction volume for the groundwater source as a percentage of the extraction limit. 	<ul style="list-style-type: none"> Plan provisions will set the mechanism to remain within the extraction limit over the long-term.
(b) Change in climate adjusted groundwater levels.	11 (a), 11 (b) and 11 (e)	<ul style="list-style-type: none"> Average annual frequency and duration (in days) of water level drawdown below pre-plan baseline. Density of extraction in critical areas. Identification of groundwater dependent ecosystems (GDEs). Assessment of the relationship between selected GDEs and local groundwater levels in terms of the water requirements of these GDEs. 	<ul style="list-style-type: none"> Note that water levels will fluctuate with climate and resultant variable recharge. Some level declines will be expected during dry times, just as level rises are expected during wetter periods.
(c) Change in water levels adjacent to identified groundwater dependent ecosystems.	11 (a), and 11 (c)	<ul style="list-style-type: none"> Assessment of the adequacy of buffer zones or local impact restrictions by comparison of water levels near or in GDEs compared to plan baseline. Frequency and duration of water level drawdown below critical levels. 	<ul style="list-style-type: none"> Groundwater dependent ecosystems should be identified in the water sharing plans.
(d) Change in groundwater quality relative to beneficial use.	11 (a), 11 (c), 11 (d), and 11 (f)	<ul style="list-style-type: none"> Trends in selected water quality parameters at selected monitoring bores that are likely to be affected by groundwater extraction. 	<ul style="list-style-type: none"> Note that many water quality issues are a function of contamination by land based activities, rather than extraction.

<p>(e) Change in economic benefits derived from groundwater extraction and use.</p>	<p>11 (b), 11 (c), 11 (e), and 11 (f)</p>	<ul style="list-style-type: none"> • Change in regional gross margins • Change in unit price of water transferred. 	<ul style="list-style-type: none"> • Note that there are many factors affecting economic status of a region, for example commodity prices, other sources of water (i.e. surface water) etc. • Assessment undertaken as part of plan performance monitoring will make assumptions to attempt to identify the impact of the plan provisions.
<p>(f) Change in structural integrity of the aquifer.</p>	<p>11 (a), 11 (b) and 11 (e)</p>	<ul style="list-style-type: none"> • Annual number of reports of new land subsidence and reduced bore yields. • Survey if necessary. • Monitor increase in applications for water supply work (bore) approvals. 	
<p>(g) Extent to which domestic and stock rights have been met.</p>	<p>11 (a), 11 (b) and 11 (e)</p>	<ul style="list-style-type: none"> • Number of reports of interference between high yield extraction and basic landholder rights, or number of domestic and stock bores deepened. • Assess frequency and duration of water level drawdown below critical thresholds. 	<ul style="list-style-type: none"> • Basic landholder rights usage figures in water sharing plans are estimated (not actual use). • Increases in licences may be due to past unlicensed works.
<p>(h) Extent to which local water utility requirements have been met.</p>	<p>11 (a), 11 (b), 11 (d), and 11 (e)</p>	<ul style="list-style-type: none"> • Monitor increase in access by local water utilities. • Monitor impact of interference between high yield extraction and local water utility extraction. 	

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|--|-------------------|---|
| | | <ul style="list-style-type: none">• Monitor increase in applications for water supply work (bore) approvals for native title basic landholder rights. |
| (i) Extent to which native title rights requirements have been met. | 11 (c) and 11 (e) | <ul style="list-style-type: none">• Number of reports of interference between high yield extraction and native title rights holders, or number of bores deepened.• Assess frequency and duration of water level drawdown below critical thresholds. |
| (j) Extent of recognition of spiritual, social and customary values of water to Aboriginal people. | 11 (c) and 11 (e) | <ul style="list-style-type: none">• Assessment of amount and type of information collected to identify the range of values of water to Aboriginal people.• The collection of information on the values associated with water is considered the first step in addressing the objects of the Act.• It would be expected that at the end of five years there should be relevant information collected for each groundwater source, as a minimum requirement. |

Appendix 4 Rules for determining History of Extraction

(Clause 25C (6))

Rule 1

The history of extraction for each entitlement is calculated separately, irrespective of ownership.

Rule 2

When meter failure has prevented the measurement of actual extraction, extraction will be estimated on the basis of:

- (a) the extraction that was estimated at the time of meter failure held on record by the Department, or
- (b) pump running times held on record by the Department, or
- (c) areas of crops grown and water usage for similar crops.

Rule 3

Estimates made under Rule 2 will be capped at licensed access to water for the entitlement for the

year in question.

Rule 4

Where non-volumetric entitlement have been converted to volumetric entitlement during or after the period being used to calculate HOE, any relevant historical extraction or other data used in converting the entitlements will be used to calculate HOE.

Rule 5

In the event of zero or reduced extraction resulting from bore failure the year in which the bore failed will be excluded in calculating HOE.

If a licence holder substantiates a case that the failure of a bore had a greater impact on extraction in the water year following bore failure, then this year rather than the year in which the failure occurred, will be the year excluded.

The licence holder must provide documented evidence of the bore failure.

Rule 6

Failure of associated bore equipment (eg motor, gearbox etc) will not be considered bore failure for the purpose of calculating HOE.

Rule 7

Reduced levels of extraction from a bore due to lower aquifer levels will not be considered bore failure for the purpose of determining HOE.

Rule 8

In the event of lower extraction resulting from crop failure no allowance will be made in calculating the HOE.

Rule 9

Water extracted pursuant to a temporary transfer of entitlement will be accounted in the HOE of the seller or transferor.

Rule 10

Where properties have been amalgamated, all extraction prior to amalgamation will be combined and together with extraction occurring after amalgamation will be used to calculate HOE.

Rule 11

When new entitlements have been created due to subdivision, extractions under the original entitlement will be apportioned to each new entitlement in proportion to the entitlement at the commencement of the plan and together with extraction occurring after subdivision will be used to calculate HOE.

Alternately, where all the new entitlement holders unanimously agreed, extraction under the original entitlement will be calculated for each bore licence and together with extraction occurring after the subdivision will be used to calculate HOE.

Rule 12

Where extractions have not been metered extraction will be assessed on the basis of (in priority order):

- (a) any relevant historical extraction data used in converting non - volumetric entitlement to volumetric entitlement;
- (b) recorded pump usage hours if available, and
- (c) areas of crops grown and water usage for similar crops each year.

Rule 13

Where an entitlement holder is unable to or does not provide information on which to base an assessment for a year the extraction for that year will be assessed as zero megalitres.

Rule 14

All extractions that a licence holder 'carried over' and/or 'borrowed' that were in accordance with management rules applying at the time will be included as extraction for determining history of extraction.

Rule 15

Metered extraction will first be allocated to:

- (a) groundwater only extraction capped at the allocation for that year, then,
- (b) conjunctive groundwater allocation (where applicable) capped at the conjunctive groundwater entitlement for that year, then,
- (c) carry over within management rule limits and then,
- (d) borrowing within management rule limits.

The sum of extraction from groundwater only entitlement, conjunctive groundwater entitlement, carryover & borrowing provision and temporary transfers will be used to calculate the HOE. Any remaining extraction will not be used to calculate HOE.